Policy, Research, and External Affairs

WORKING PAPERS

Education and Employment

Population and Human Resources
Department
The World Bank
June 1991
WPS 701

Education and Adjustment

A Review of the Literature

Andrew Noss

There appears to be a causal link between adjustment and education but the nature of the link varies widely and is poorly understood. More monitoring, research, and analysis are needed.

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This paper — a product of the Education and Employment Division, Population and Human Resources Department — is part of a larger effort in PRE to understand the education sector in the broader context of Bank operations, particularly adjustment programs. It is the second step in a research agenda that includes analysis of how the education sector should be treated in public expenditure reviews in the context of adjustment (see WPS 510) and of how adjustment-related operations affect the education sector. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Cynthia Cristobal, room S6-035, extension 33640 (68 pages with figures and tables).

Many recent studies evaluate the effects of adjustment on economic growth and on the poor, but few assess the specific impacts of adjustment on the education sector. Noss assesses what is known about how adjustment (particularly World Bank adjustment lending) affects education.

He concludes that reliable evidence about the effect of adjustment policies on education is limited.

Most critics of adjustment programs say little about education directly and do not distinguish the effects of adjustment measures from the effects of international recession, fiscal constraints, or structural problems. Early adjustment programs ignored education issues — but adjustment lasted longer than expected, so the Bank has broadened its approach to protect education from the negative effects of adjustment.

Relevant data are scarce and of poor quality. The most common indicators — aggregate financing and enrollment indicators — are difficult to interpret. Moreover, analyses may compare indicators between two before-and-after points but say nothing about how or why indicators change.

The effects of changes in financing on coverage, quality, and equity of education are by no means obvious. Education has a long gestation period, so the impacts of adjustment may not yet be evident. Country studies are probably the best framework for analyzing the adjustment process. The database of kev education indicators must be improved.

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Reviewers Birger Fredriksen (PHREE), Luis Riveros (CECMG), Antoine Schwartz (PHREE), Gail Stevenson (PHREE), Jacques van der Gaag (PHRWH), and Adriaan Verspoor (PHREE) made helpful comments on earlier drafts.

ACRONYMS

EIAL	Early Intensive Adjustment Lending Country
EMENA	Europe, Middle East and North Africa region
GDP	Gross Domestic Product
GNP	Gross National Product
IAL	Intensive Adjustment Lending Country
IDS	Institute for Development Studies (Sussex)
ILO	International Labour Office
IMF	International Monetary Fund
LAC	Latin America and Caribbean region
LSMS	Living Standards Measurement Surveys
NAL	No Adjustment Lending Country
OAL	Other Adjustment Lending Country
PE	Primary Enrollment Rate
PER	Public Expenditure Review
PFP	Policy Framework Paper
PPP	Purchasing Power Parity
PRM	Public Resource Mobilization
SAC	Structural Adjustment Credit
SAL	Structural Adjustment Loan
SDA	Social Dimensions of Adjustment
SECAL	Sector Adjustment Loan
SECIL	Sector Investment Loan
SIL	Specific Investment Loan
SRA	Sector Resource Allocation
SRM	Sector Resource Mobilization
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
WDR	World Development Report

EXECUTIVE SUMMARY

i. This pap reviews the literature (World Bank and external sources) in order to assess what is known about the effects of adjustment on education, with particular emphasis on World Bank adjustment lending. Facing external shocks and serious balance of payments disequilibria, countries have several choices: to postpone the need for adjustment by borrowing more abroad, to increase domestic controls and the inward orientation of the economy, or to undertake a program of managed adjustment (usually with IMF or World Bank assistance). World Bank adjustment lending supports several types of policies that directly or indirectly influence education: trade policies (exchange rate flexibility, trade liberalization), fiscal policies (tax and price reforms), and public sector management policies (reductions in expenditures, civil service reform). In the short term, these policies affect both education supply and demand. Long-term effects depend on whether adjustment successfully renews economic growth, and whether any short-term damages are reversible. Adjustment measures affect education through changes in the macro (budget containment, cost recovery) and micro (household incomes and prices) levels of the economy. The impacts of adjustment on education are determined by conditions in the sector before adjustment, as well as the nature and implementation of the adjustment program.

ii. Adjustment programs have incited strong debate since their inception, with the debate focusing on IMF and World Bank adjustment lending. However, most critics of adjustment programs say little about education directly, and do not distinguish the effects of international recession, fiscal constraints, or structural problems from the effects of adjustment measures. The Bank initially emphasized that macroeconomic adjustment policies were short-term and therefore were not the appropriate instrument for promoting long-term social development. Early adjustment programs ignored education issues, seeking to rapidly redress economic distortions. But the adjustment process lasted much er than expected, and Bank and external researchers found evidence of significant shor .m costs in the social sectors. As a result, the Bank has broadened its approach to adjustment in order to better protect education from direct and indirect negative impacts of adjustment. SAL conditionality targeting education increased, and the Bank also developed new instruments for policy lending to the sector: education SECALs, hybrid loans combining investment and adjustment components, traditional investment loans that specifically support sector adjustment programs, and sector investment loans.

iii. Analyzing how adjustment affects education is more important than simply determining adjustment's "guilt" or "innocence." In order to design and implement appropriate interventions, lenders, borrowers, and policymakers need to know how macroeconomic and sector adjustment, both as on-going processes and as deliberate responses to discrete circumstances, affect one another. It is particularly important to determine the likely effects of policy reforms on sector financing, and in turn, the effect of changes in financing on coverage, quality, and equity. The literature frequently suggests that declining trends during the "adjustment" period (post-1980) imply causality, and offer hypotheses about how macroeconomic or sector adjustment policies translate into sector effects. However, concrete evidence that explains the process of sector adjustment to sector or macroeconomic reforms and that supports general statements is lacking.

iv. Although adjustment has certain direct and indirect implications for education, many of the current trends have their roots in preadjustment mismanagement or economic recession. Adjustment is an essential and continuous process for every country that wishes its economy to grow. Countries must continuously adapt to changing international conditions. Many countries that do not adjust quickly enough face serious difficulties, including unsustainable fiscal deficits and debt burdens. Nonadjustment results in distortions and inefficiency at the macro and sector levels that are exacerbated over time, and is likely to have serious detrimental effects on education.

v. In order to understand the process through which adjustment affects education, a comparative dynamics approach is required, i.e., one that incorporates the dynamics of the effects of change internal to the system on outcomes. An ideal methodology would determine how specific adjustment measures affect education supply and demand, and in turn how the interactions between supply and demand factors translate into sector outcomes. Even when correlation is evident, analysts must delve deeper to determine what happened, why did it happen, was the outcome intended, and is the direction of change positive or negative. In addition, it is necessary to estimate likely education outcomes in the absence of adjustment programs, in order to establish causal links between indicators and adjustment programs.

vi. Evaluation studies have not rigorously followed this approach. Available data and models limit analysis to a comparative statics approach. First, the data describing the evolution of the education sector during adjustment are scarce and of poor quality. The most common indicators are aggregate financing and enrollment indicators that are difficult to interpret. Second, whether they compare figures from "before" and "after" adjustment or establish typologies of "adjusting" versus "nonadjusting" countries, analyses compare indicators between two static points, but say nothing about how or why the indicators changed. In particular, the effects of changes in financing on coverage, quality, and equity are by no means obvious. Because education has a long gestation period, the impacts of adjustment may not yet be evident. Long-term effects may differ in magnitude and direction from short-term effects. Finally, it is virtually impossible to isolate the effects of adjustment from those of other simultaneous influences on the sector. Given the complexity of adjustment, combined with data constraints, it may be impossible to develop a general methodology to analyze how adjustment programs affect education. In the absence of any crosscountry comparative dynamics models for adjustment and the education sector, country studies that crosstabulate a variety of indicators provide some insight into the dynamics of adjustment and education.

vii. In the literature that compares the situation in "adjusting" and "nonadjusting" countries, the principal conclusion is that public education expenditures and gross primary enrollment rates are negatively associated with World Bank adjustment lending. The long-term implications for national development are serious. Education financing deteriorated in adjusting countries because recession reduced all public expenditures, debt service obligations grew, or civil service wages changed and reduced education's budget share relative to less labor-intensive public sectors. However, the question of what would happen in the absence of adjustment lending remains. Education expenditures may decline even

more and long-term effects may be even more serious if macroeconomic and sector distortions persist.

viii. In general, sector financing data only describe central government spending (neglecting local government or private resources). The coexistence of adjustment programs and declining enrollment rates does not necessarily imply causality, nor are the means through which adjustment policies translate into enrollment changes apparent. Country studies suggest that public education financing is not immediately and directly associated with enrollment rates. Coverage of quality indicators is inconsistent, incomplete, and inconclusive regarding the impacts of adjustment programs on education quality. Available evidence must be interpreted carefully, as the links between adjustment policies and quality indicators are difficult to ascertain. Nor does the literature analyze equity indicators in a systematic manner. The most widely-cited equity indicator is the female (versus male or total) primary enrollment rate. Adjustment appears not to have influenced equity: female enrollment rates continued to approach male enrollment rates during the adjustment period. Quantitative evidence in the form of comparisons between rural and urban areas or household income levels is scarce.

ix. The difficulties in separating the costs of adjustment from the costs of external shocks, poor policies, or nonadjustment, imply a continuing need for careful monitoring and analysis. To analyze the process through which adjustment affects the education sector, time series data are necessary for a number of years before, during, and after (if possible) adjustment. Data collection and monitoring efforts must focus systematically on a wide range of indicators that measure aspects of education supply and demand. Expenditure data should measure more than the absolute and relative allocation of public resources to the sector, for example private, community, and local or regional government financing. Sector resources should be categorized by function (capital versus recurrent), by purpose (salaries, supplies, maintenance), and by level of education. Data on income distribution, the potential returns to education, as well as the opportunity and private costs of education are necessary to understand education demand.[1/] Collecting this information is a massive undertaking, and may only be feasible in country studies.

x. In conclusion, reliable evidence on the effect of adjustment policies on the education sector is limited. There appears to be a causal link between adjustment and education, but the nature of the link varies widely and is poorly understood. For example, evidence of reductions in public expenditures during adjustment is pervasive, but there is considerable uncertainty regarding the effects of declining public financing on education. Explanatory models are poorly specified, and they rely on a weak database. As a result, it is difficult to determine causality, i.e., to isolate the specific effects of adjustment policies. Furthermore, the implications of changes in financing for education quality and equity are

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[1/]Addition information is useful in evaluating changes in quality and equity, for example: changes in health and nutrition that affect children's learning ability; intake, repeater, and dropout rates, as well as student performance on standard exams; enrollment rates broken down by region, gender, and income level.

unclear. Given country-specific initial conditions, shocks, and adjustment packages, country studies are the most effective framework for analyzing the adjustment process.

xi. Further research and analysis that focuses on process monitoring is critical. For example, the database can be improved by monitoring key education indicators during the adjustment process. Research should seek to complement existing comparative statics assessments with analyses of the dynamics of sector adjustment. Particular questions for further research that have important implications for the design and implementation of adjustment programs are given below. But even in the absence of precise answers, evidence suggests probable links between adjustment measures and the education sector. Progress is evident in the design of World Bank adjustment lending, but much more needs to be done to address education sector issues.

- How do macroeconomic policies, particularly changes in public expenditure levels, affect the supply of education? How do changes in supply in turn affect coverage, quality, and equity in the education sector?

- How is contraction in the education sector managed--what are the dynamics of budget cuts among different subsectors of education? What political forces promote or impede adjustments? If resource transfers from higher to primary education are widely recommended, why are they not implemented? How, if at all, can adjustment lending affect institutional bottlenecks?

- Is education protected or vulnerable relative to other sectors during periods of fiscal retrenchment, increasing debt, or civil service reform? Does education vulnerability vary by region or income level? If differences exist, can they be explained by differences in the adjustment process between country groups? What types of policies or conditions enable a country to protect education (i.e., deliver a reasonable level of service), and specifically basic education?

- To what extent have local government, community, private, or household resources replaced declining government resources? How do decentralization and cost recovery in turn affect coverage, quality, and equity?

- How and why has demand for education changed during adjustment? How do changes in incomes (the household's or individual's ability to invest in human capital), the opportunity cost of attending school, private returns to investing in education, or health and nutrition affect coverage, quality, and equity?

I. INTRODUCTION

1.01 Although many studies evaluate the effects of adjustment on economic growth and on the poor, few assess the specific impacts of adjustment programs on the education sector. This paper reviews the literature on this topic (World Bank and external sources) in order to assess what is known about the effects of adjustment on education, with particular emphasis on World Bank adjustment lending. Section I provides a brief description and history of adjustment lending, and analyzes how adjustment policies affect the education sector. It concludes with a description of changes in adjustment lending and presents several types of loans that address education issues. Section II describes the types of data and methodologies used to assess the impact of adjustment on education. The section also points out difficulties in interpreting available data. Section III analyzes major factors (capacity, coverage, quality, and equity) that affect education supply and demand, and suggests additional data and analyses that are required to design and implement effective adjustment interventions from the education sector perspective. Finally, Section IV broadly summarizes how the sector manages the adjustment process. It concludes with a number of questions for further research that have important implications for designing and implementing adjustment programs.

A. Description

1.02 Many developing countries faced serious balance of payments problems during the late 1970s and early 1980s. The problems stemmed from factors such as the sharp deterioration in the terms of trade for oil-importing countries and from the legacy of weaknesses in domestic policies and institutions (for example, overvalued exchange rates and bloated civil services). Faced with adverse external shocks, a country can respond in several ways. One is to postpone the need to adjust by borrowing more abroad--an alternative seldom open to countries already heavily indebted in the 1980s. Another is to increase domestic controls and the inward orientation of the economy--an alternative likely to be costly in terms of efficiency and growth. Finally, a country can undertake a program of managed adjustment, usually with IMF and World Bank assistance. Adjustment broadly includes managed reductions in public expenditures as well as changes in relative prices. Adjustment measures are designed to make the economy more efficient, more flexible, and better able to use resources and thereby to engineer sustainable long-term growth.

1.03 The World Bank's first structural adjustment loans (SALs) were extended in 1980. Adjustment loans differ from traditional investment loans in that they provide quick-disbursing budgetary support disbursed in tranches against successful implementation of a set of agreed-upon policy actions. World Bank adjustment policies are distinct from the IMF's stabilization policies. Stabilization is short-term, demand-oriented, and focused on the macroeconomic and financial sides of the economy. Adjustment is aimed at the medium-term (3-5 years), supply-side, microeconomic as well as macroeconomic, and real sides of the economy. The two interventions are coordinated in the medium term since the IMF and the World Bank agree with the country on priorities in a joint policy framework

paper (PFP) before engaging in any stabilization or adjustment lending.[1/] Lending conditionality must then coincide with the PFP. In practice, almost all adjustment loans have been contingent upon having an IMF stabilization agreement under way or already in place (Stevenson, 1988).

1.04 After growing rapidly in the first half of the 1980s, adjustment lending leveled off in 1986-88, when it averaged $4.5 billion a year or 24 percent of Bank Group lending. The scope of adjustment lending widened with the introduction of sectoral adjustment loans (SECALs) and, to a smaller degree, quick-disbursing components of hybrid investment and adjustment loans. SECALs increased from 15 percent ($15 million) of World Bank adjustment lending commitments in 1980 to 64 percent ($2,535 million) in 1990. Seventy countries had received over 200 adjustment loans by the end of FY90. Sixteen countries had five or more SALs or SECALs, 23 countries three or four adjustment loans, and 31 one or two (see annex 2). Adjustment lending recipients are equally divided between low-income and middle-income countries, with Sub-Saharan Africa accounting for most of the former and the highly-indebted countries for most of the latter. In 1989, regional shares of total adjustment lending commitments were similar to those in recent years: 44 percent LAC, 20 percent Africa, 19 percent Asia, and 17 percent EMENA.

1.05 The World Bank's adjustment lending supports several types of policies. Trade policies emphasize exchange rate flexibility, export expansion, and import liberalization. Fiscal policies include tax reforms and the removal of price distortions that adversely affect productivity. Public sector management policies seek to improve management capabilities and the efficiency of government expenditures. The World Bank and the borrower agree on a number of "conditionalities" that are to be met prior to or during the course of loan disbursement. Conditionality initially applied to macroeconomic policy elements, but during the 1980s widened to include conditions relating to sectoral, institutional and micro levels (Havnevik, 1987). Conditionality in several policy areas has important implications for the education sector. Public recurrent and capital expenditures conditionality addresses the size and composition of the public investment program, as well as the recurrent expenditure allocation, in order to reduce the government budget deficit and rationalize the public expenditure program. Wages and employment conditionality focuses on civil service retrenchment and is often implemented through a wage bill or hiring freeze. Subsidies conditionality reduces or removes government subsidies in order to correct price distortions, improve economic efficiency, and improve the equity and efficiency of subsidy programs through better targeting. Social policies conditionality protects vulnerable groups from the impacts of adjustment, especially during the transition period (Kakwani, et.al., 1990).

B. Effects of adjustment on education

1.06 Adjustment programs have incited strong debate since their inception. The debate focuses on IMF and World Bank lending, although a number of countries undertook adjustment programs without assistance from these two institutions, and other bilateral and

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[1/]However, in the short term IMF and Bank programs may have significantly different objectives: for example, recent Bank programs emphasize social nets and target groups.

multilateral donors cofinanced adjustment programs. The effects of adjustment on education depend on the external environment as well as on conditions within the country and within the sector before the adjustment period. Sahn (1989) suggests that the variability in performance and outcomes observed in adjusting countries largely reflects: 1) external and domestic circumstances that precipitated the need for such change (inefficient domestic policies, external shocks, the debt crisis), and under which reform programs are applied; 2) the character of the policy package (macro versus sector-specific measures); 3) the degree and pace of implementation; and 4) the choice of the year as the starting point for "adjustment."

1.07 Most critics argue that adjustment negatively affects incomes and living conditions of the poor. Evidence to support these arguments is not conclusive. Although critics say little about education directly, their arguments do apply indirectly to education: deteriorating incomes and living conditions may reduce demand for education, while improved education may help improve incomes and living conditions. One argument is that adjustment programs stem from a strictly economic outlook that considers recurrent expenditures on education to be the same as any other recurrent spending. Thus educat is simply one more source of public spending that aggravates budgetary disequilibriun However, human capital theory views recurrent education spending as a productivity-raising investment in human resources. Therefore, changes in recurrent spending that alter the output and quality of education affect the productivity of human resources, and in turn affect national income and growth over the long term. Adjustment policies that reduce education spending may reduce investment in human capital if spending does not become more efficient, and may have long-term costs that outweigh short-term cost savings. In fact, many Bank-funded adjustment program explicitly protect real education expenditures, particularly at the primary level, and focus on ways to increase the efficiency of resource use in the sector.

1.08 Another important argument is that in practice policy changes under adjustment are guided by political rather than efficiency considerations. This argument addresses the implementation rather than the design of adjustment programs. Nevertheless, changes in program design may alleviate some implementation obstacles. Serageldin (1989) asserts that a common tendency is to cut back on social spending at basic levels (primary education) in favor of areas where political constituencies are more powerful (universities) Experton (1988) concurs that governments find it easier to avoid increasing access to primary education than to impose structural reforms to reduce demand for higher education.[2/] The result is that resources increasingly favor higher levels of education, particularly at the expense of rural and marginalized populations, the ones least likely to react negatively to these austerity measures. Furthermore, Gallagher (1990) states that for political reasons, direct hardships to employees and immediate costs to society or

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[2/]For example, in response to nationwide student unrest in 1987-88 among secondary and university students, the Senegalese government proposed substantial increases for higher education in the 1988/89 budget, contrary to the adjustment program's targets for containing expenditures in higher education in order to finance expansion of primary education (Fredriksen, 1990a).

policymakers are avoided. Amadeo and Camargo (1989) also argue that tight budgets result in spending cuts to those items easiest to cut (supplies, infrastructure) rather than those making the most sense from an efficiency viewpoint (salaries, jobs). Contractionary budgets therefore tend to be accompanied by lower allocative efficiency although the goal is to improve efficiency.

1.09 Although adjustment policies do have certain direct and indirect implications for education, current trends often have their roots in pre-adjustment mismanagement or economic recession. Most critics of adjustment programs do not distinguish the effects of international recession, fiscal constraints, or structural problems from the effects of programs or policies designed to offset them. Some recognize that recession and the debt crisis produced severe fiscal imbalances that require adjustment of some form (Knight, 1989), but others imply that countries would make no policy changes to improve the situation in the absence of Bank lending, although policies are often unsustainable (Michalopoulos, 1987). Adjustment is an essential and continuous process for every country that wishes its economy to grow. Countries must continuously adapt to changing international economic conditions, particularly external shocks such as increases in the price of oil, world recession, and changing terms of trade. Many countries that do not adjust quickly enough face serious difficulties, including unsustainable fiscal and trade deficits, large debts, unrealistic exchange rates, inappropriate tax and price structures, and inefficient public sector management. Nonadjustment results in distortions and inefficiency at the macroeconomic and sector levels that are exacerbated while resources decline and economic growth stagnates, and is likely to have serious detrimental effects on education.

1.10 Adjustment measures (undertaken with or without World Bank assistance) affect education through changes at the macro and micro levels of the economy. Adjustment at the macro level often implies a combination of budget containment measures for the public education system, limited access to postprimary public education, and higher user fees for education services at the secondary and tertiary levels. At the micro level, changes in household incomes and prices (user fees, reduced student subsidies) directly influence the demand for education by altering the opportunity cost of attending school (UNDP, 1989). Household incomes also affect health and nutrition status, and thus indirectly influence attendance and learning ability. Finally, adjustment affects education through changes in markets and infrastructure (resulting from currency devaluation, fiscal and monetary restraint, and price liberalization) that affect the supply of education services and the opportunity cost of attending school (World Bank, 1990b). More specifically, adjustment policy effects on education supply and demand are described below.

1.11 Education Supply: The most obvious impacts of adjustment policies on education are short-term changes in public expenditures. Education supply need not decline if private resources replace public resources. But in most countries, education is primarily funded by the public sector. Because SALs focus on correcting imbalances in the economy and laying the foundations for growth rather than on equity, the particular forms taken by cuts in subsidies, real wages, and real education expenditures have high social costs, at least until the economy begins to grow (Cornia, et.al., 1987). Griffin and Knight (1989) argue that in many Third World countries human development programs are "savagely" cut, and long-term prospects for development diminish while inequality and poverty increase. The

most sophisticated analysis available (Kakwani, Makonnen and van der Gaag, 1990) associates adjustment lending with declining trends in public education financing and gross primary enrollment rates. Lower public education expenditures may result in lower quality and quantity of education services, fewer amenities (school lunches), or higher user fees. Furthermore, any change in civil service wages or employment has particularly strong effects on the labor-intensive education sector. Lower wages may reduce the short-term efforts of teachers, if not cause an exodus of experienced teachers (UNDP, 1989). Even if adjustment policies do not cause deteriorations in social conditions directly, they are criticized for not reversing declining trends.

1.12 On the other hand, Kakwani, et.al. (1990) suggest that the need to cut expenditures provides an opportunity to increase efficiency and equity in the use of resources. Serageldin (1989) notes that the Bank increasingly supports specific measures to protect vulnerable groups, for example by shielding public expenditures on key education and basic welfare services, by reviewing the composition of education expenditures and reorienting government spending in the sector, and through compensatory actions and transitional arrangements. Berg (1989) emphasizes that measures to reduce secondary and higher education's budget shares over time release resources that can be reallocated to primary education. Costs can be reduced by improving the efficiency and cost-effectiveness of all public expenditures. The Bank hopes that by giving the social impacts of adjustment programs earlier and more serious attention, the adverse impacts of adjustment can be reduced (Ribe, et.al., 1990). For example, education expenditures can target those most in need, while the burden is placed on the relatively wealthy who have access to private education facilities and are able to pay higher fees (Demery and Addison, 1987). The need to restructure the public budget under adjustment is an opportunity for governments to evaluate social programs. If these measures are effective, the quantity and quality of education services could improve during the adjustment period, even when sector resources decline. Guaranteeing access to education services protects the human capital of the poor, but will often require additional public resources. The Bank (1989e) explicitly recommends that governments in Africa commit additional resources to the social sectors, with an overall objective of 8-10 percent of GDP to be spent on human resource development.

1.13 Education Demand: The major demand effect is likely to be short-term reductions in income that lower demand for schooling. Declining household incomes, higher unemployment levels, and changes in relative prices raise the opportunity cost of time spent in school, relative to time spent in economic or household activities. Demand for education also decline if poor health and nutrition reduce attendance and the capacity to gain from education. Finally, demand responds to changes in supply such as lower quality and higher user fees.

1.14 Demand effects of adjustment policies are also positive. If children have less attractive labor market options, the opportunity cost of attending school declines. Demand also increases in response to more attractive labor market options: adjustment in the long term increases the expected private rate of return to education in response to expected improvements in the long-term prospects of the economy if the adjustment program is successful (UNDP, 1989). Overall impacts on demand vary by level of education because of differences in social and private rates of return to education investment. The social rate

of return from primary education, and the private rate of return from tertiary education, are relatively high. Therefore, reductions in public education expenditures will affect subsectors differently, depending on how the cuts are implemented. Cuts at the primary level tend to reduce demand, whereas cuts at the tertiary level are more likely to induce private expenditures, and demand is less likely to decline. For this reason, many adjustment programs include reallocations from tertiary to primary education.

1.15 Short-term versus Long-term Effects: Bank analysts continue to argue that some short-term social costs are inevitable when an economy has to adjust to adverse external shocks or to the effects of previous policy mismanagement. Even a well-designed adjustment program harms some groups, while the majority benefit, since adjustment usually involves changing relative prices and reducing government expenditures. But Nicholas (1988) proposes that the transitional costs of orderly adjustment are smaller, particularly under recent adjustment programs that include conditions for maintaining social sector expenditures, and the long-term benefits larger, than with ad hoc adjustment.

1.16 The long-term effects depend very much on whether the adjustment policy is successful (economic growth resumes, employment increases, and wages rise). If it is, then as compared with the situation that would have prevailed without the adjustment program, the private returns to education and the supply of resources for education will probably be greater. However, the opportunity cost of time spent in education rather than in productive activities is also likely to be greater. Generally the former effect is expected to dominate, though it is far from obvious that it will in all cases (UNDP, 1989). According to Turok (1989), "education is a slow process requiring sustained effort which cannot be made up for by crash-courses when funds once more become available." Likewise, Simai (1986) warns that unavoidable cuts in social expenditures should be made with extreme caution and with a long-term policy view, since losses in these areas cannot be easily recouped and long-term damages, even of shorter-term measures, may be excessively high. Disinvestment in human capital threatens the country's future development potential.

C. Changes in World Bank adjustment operations

1.17 The Bank initially emphasized that macroeconomic adjustment policies were not the appropriate instrument for supporting long-term social development. However, the adjustment process lasted much longer than expected, and Bank and external researchers found evidence of significant short-term costs in the social sectors. As a result of external analysis, experience with adjustment lending, and changing government and World Bank objectives, adjustment loans at the end of the 1980s differed significantly from those in the early 1980s. The Bank traditionally focused on the investment budget and paid less attention to budget posts primarily financed through the recurrent budget (such as education). The first SALs did not consider the social impact, and the Bank disassociated economic adjustment policies from the social sectors. However, adjustment is taking longer in most countries than was originally expected. Two Bank reports on adjustment lending (1990a, 1988e) concluded that because domestic inefficiencies proved to be more intractable than previously thought and external uncertainties continued, the focus of adjustment lending should shift from short-term crisis management and stabilization to more fundamental issues of long-term growth, development, and poverty reduction (Ribe and

Carvalho, 1990b). Furthermore, the Bank recognizes that adjustment programs impose transitional costs: output, employment and consumption are depressed as in a recession; the structure of incentives is changed to stimulate a reallocation of resources between sectors and activities; and productive resources do not move effortlessly and instantaneously among alternative uses in response to changes in relative prices.

1.18 The Bank approach to adjustment evolved and gradually measures were incorporated in adjustment programs to protect the social sectors including education from the direct and indirect negative impacts of adjustment measures. The lending focus shifted from macroeconomic (SALs) to sector (SECALs) adjustment. Less comprehensive SECALs were often politically more acceptable and also more feasible, given the limited implementation capacity in many countries. The sector approach was also more appealing because reforms of sectoral institutions and policies often had the potential both to address macroeconomic problems and to increase efficiency at the sectoral level. The following quotes illustrate how the focus of adjustment lending changed:

> 1986: SALs are not intended, nor are they the appropriate instrument, to address poverty, basic needs and social issues directly. It is virtually impossible to alleviate poverty and deficiencies in social services in a severely distorted economy in a crisis situation. SALs therefore seek to redress these distortions, and the poor will benefit in the medium-term to long-term (World Bank, 1986d).

> 1990: Adjustment programs should provide measures to reduce the potential short-run burden on the poor of external shocks or adjustment policies. Social sector adjustment loans (SECALs) should complement adjustment policy reforms by supporting measures to achieve fundamental social objectives, such as improving education for the poor. This type of lending should be an integral part of overall adjustment programs (World Bank, 1990a).

Both types of adjustment loans increasingly supported greater efficiency and equity in social expenditures, particularly in the education sector (Nicholas, 1988). Recent Bank adjustment operations include more detailed analyses of the anticipated social impacts of adjustment programs and more measures to alleviate the short-run costs (such as reallocations of social expenditures toward services used by disadvantaged groups).

1.19 The Bank's first attempts to address education in adjustment programs were introduced several years after Bank-assisted adjustment had begun, in the form of education SECALs. Most recently, the Bank began to address the sector in SAL conditionality, or in investment projects designed and implemented at the same time as the overall adjustment program. Concern for the education sector has shifted to much earlier in the adjustment process, and a pattern of increasing attention over time to education sector concerns is evident. Not only did SAL conditionality targeting education increase after 1986, but the World Bank also developed new instruments for policy lending to the sector: education SECALs, hybrid loans combining investment and adjustment components, specific investment loans with a significant policy component, and social development funds.

1.20 Structural adjustment operations: Ribe and Carvalho (1990b) review 30 SALs (approved between July, 1986 and December, 1988) and conclude that more recent SALs include a greater number of interventions to address the social impacts of adjustment. SAL conditionality specifically referring to education and the social sectors greatly increased in recent years (box I.1).[3/]

BOX I.1: SALs that address education

Recent SALs include social expenditure reforms that protect the poor against short-term social costs or that enhance the long-term impact of the adjustment program on the poor. In particular:

- SALs seek to maintain or increase real expenditures on basic education in a period of overall reduction in public expenditures. Mauritania's SAL I (1987) gave priority in allocating budgetary resources to education, albeit under the strict constraint of balanced budgets.
- SALs redirect social sector expenditures to the poor through better resource targeting toward or within primary education. Niger's SAL I (1986) channeled public savings from reduced transfers and subsidies and higher user charges for tertiary education to primary schooling.
- SALs improve the efficiency of public social expenditures. Sao Tomé and Principé's SAL I (1987) proposed to improve public expenditure efficiency in education by assuring adequate budgetary allocations and by redesigning programs and delivery systems to maximize the impact of such programs.

Source: Ribe and Carvalho (1990b).

[3/]Examples are SALs in Benin (1989), Cameroon (1989), Côte d'Ivoire (1982, 1984), Gabon (1988), Ghana (1987, 1989), Guinea (1988), Malawi (1981, 1984), Mauritania (1987), Mozambique (1989), Niger (1986), Senegal (1986, 1987, 1990), Togo (1988), and Zaire (1987).

BOX I.2: Sector adjustment lending in Ghana and Mali

GHANA: Ghana's First Education Sector Adjustment Credit (1987) supported the government's education reform program to reverse the decade-long deterioration in educational infrastructure and to use recurrent expenditures more efficiently. The program is being continued under the Second Education Sector Adjustment Credit (1990). The reform supports the following measures:

- Duration of schooling: Shorten pre-university schooling from 17 to 12 years, and increase the length of the school day and the school year.

- Curriculum: Manufacture a limited number of basic textbooks locally, many of them in local languages, and introduce a simplified syllabus for junior secondary schools. Levy fees for textbooks in secondary and tertiary education.

- Teacher training: In response to a growing shortage of qualified teachers, shorten the teacher training course for new teachers by a year to three years.

- Budget: Audit the Ministry of Education staff, abolish all posts "filled" by non-existent teachers, and reduce non-teaching staff. Halve the room and board subsidy for secondary and tertiary institutions, replacing subsidies with scholarships or loans for the most needy students.

MALI: Mali's Education Sector Consolidation Project (1989) combines a sector adjustment program with an investment element that focuses on primary education and the management of sector resources.

The sector adjustment program establishes the policy and institutional framework for improving, at all levels of the system: a) access and equity, b) performance and relevance, and c) the cost-effective management of human, financial and physical resources. For example, student flows into secondary and higher education are controlled in line with projected budgetary resources and trends in labor market demand. The adjustment program also supports revision of textbooks and teacher training policies, mobilizes private resources, and restructures the budget in favor of primary education and materials.

Within this framework, the investment element supports the core investments of a long-term development program. It increases enrollments through a school construction, rehabilitation, and repair program. Additional investment focuses on revising teacher training and primary education curricula, as well as on providing textbooks, pedagogic materials, and in-service training.

Sources: Nicholas (1988), World Bank (1989b).

1.21 Sector adjustment operations: SECALs (box I.2) are typically extended to countries facing acute macroeconomic difficulties as well as severe distortions in the allocation and use of education resources. The sector adjustment program normally comprises: a) reforms to promote more efficient allocation and use of sector resources; b) targets for the share of the government's budget allocation to the sector, to specific subsectors, or to particular types of expenditures; and c) a medium-term investment program for the sector (Fredriksen, 1990b). The first Education SECAL was to Morocco in 1986, followed by others in Ghana (1987, 1990), Guinea (1990), and Nigeria (1990). The World Bank's first and only "hybrid" education sector investment and adjustment loan in Mali (1989) combines the adjustment features of a SECAL with the investment features of an investment loan. The hybrid loan is used where preventing the deterioration of already low education quality and coverage is urgent, requiring both broad reforms as in SECALs and investment to support the implementation of the reforms (Fredriksen, 1990b).

1.22 Investment projects concurrent with adjustment operations (box I.3): The bulk of Bank involvement with education sector adjustment continues to be through traditional project lending. Specific investment loans (SILs) finance investments (specific works, goods, and services) designed to create new education and training capacity and to improve the quality and efficiency of existing programs by strengthening the sector's planning and management capacity. SILs gradually evolved from an almost exclusive focus on the economic and technical viability of the investment itself to include policy reforms considered essential to ensure its overall sustainability.[4/] Sector investment loans (SECILs) also support policy and institutional change objectives, but differ from traditional SILs in that SECILs transfer responsibility for detailed project design, appraisal and supervision (especially of physical investments) from the Bank to the borrower. SECILs also focus more on policy and institutional objectives, and typically finance a share of the country's sectoral investment program (Fredriksen, 1990b).[5/]

[4/]Examples of recent SILs (FY1990) that incorporate strong adjustment measures are Bangladesh (General Education), China (Vocational and Technical Education), Malawi (Second Education Credit), and Tanzania (Education Planning and Rehabilitation).

[5/]SECILs for FY1990 were Egypt (Engineering and Technical Education), Pakistan (Sind Primary Education Development), Turkey (National Education Development), and Korea (Universities Science and Technology Research).

BOX I.3: SILs and SECILs

SENEGAL SIL: The principal objective of the Sénégal Primary Education Development Project (1987) was to assist the government in accelerating the qualitative and quantitative development of primary education, within the framework of its adjustment program. The adjustment measures promoted through the project are in most respects as comprehensive as those promoted through recent SECALs or hybrids. The project combines an investment component (that addresses textbooks provision, planning and research capabilities, construction), with a policy component. The policy component has two types of measures:

- To increase primary school enrollments by reducing unit costs through more efficient use of teachers and facilities: double-shift and multi-grade teaching, higher student/teacher ratios, increase the ratio of "instituteurs" to "instituteurs-adjoints."

- To contain spending in post-primary education: reduce scholarships and indirect subsidies, establish cost recovery, and limit budget growth.

MALAWI SECIL: Malawi's First Education Sector Credit (1987) financed a three-year time slice of the government's 1985-1995 education investment program. Responsibility for project design and implementation was transferred to the government because the latter had demonstrated, in the course of five preceding education projects, adequate appraisal and implementation capability. The government prepared a series of policy actions that the program supported:

- To improve education equity by increasing primary education's share of education resources.

- To improve education efficiency, i.e., improved student flows especially at the primary level). Specific measures targeted curriculum reform, teacher training, lower student/teacher ratios, and sufficient supply of materials.

- To contain the growth of public expenditures on education by reducing unit costs and increasing cost recovery measures at postprimary levels.

- To improve access to primary (self-help primary school construction program), secondary (shift system and more day schools), and vocational education (better utilization of existing facilities).

Sources: Fredriksen (1990a), World Bank (1987c).

II. THE EVIDENCE: METHODOLOGY AND DATA LIMITATIONS

2.01 In order to understand the process through which adjustment measures affect education, a comparative dynamics approach (i.e., one that incorporates the dynamics of the effects of change internal to the system on outcomes) is required.[1] An ideal methodology would need to identify exactly what adjustment is: what are the specific measures and how do they, independently from other simultaneous influences on the sector, translate into effects measurable by education indicators (i.e., establish causality).[2] Analysts must determine how adjustment programs affect the factors governing education supply and demand, and in turn how the interactions between supply and demand factors translate into sector outcomes. In addition, it would be essential to estimate likely education outcomes in the absence of adjustment programs, in order to establish causal links between indicators and adjustment programs. However, given the complexity of adjustment, combined with data constraints, it may be impossible to develop a general methodology to analyze how adjustment programs affect education. A recent UNDP report concludes that "problems of data and methodology have thus far been so severe as to preclude any systematic evaluation of the social impacts of adjustment programs" (Chapelier and Tabatabai, 1989).

2.02 Existing data and models limit analysis to a comparative statics approach. First, the data describing the evolution of the education sector during adjustment are scarce and of poor quality. Second, whether they compare figures from "before" and "after" adjustment or establish typologies of "adjusting" versus "nonadjusting" countries, analyses compare indicators between two points in time, but say nothing about how or why the indicators changed. In the absence of crosscountry comparative dynamics models for adjustment and the education sector, country studies that crosstabulate a variety of indicators provide some insight into the dynamics of adjustment and education.

A. Methodology

2.03 Most analysis in the literature is superficial and based only on trends in education indicators during the period after 1980--the "adjustment" period--or on anecdotal evidence. Adjustment policies are cited as one of the factors that influence trends, along with the global economic crisis, the debt burden, political strife, environmental degradation, and population growth (Colclough and Lewin, 1990; Lewin and Berstecher, 1989). Anecdotal evidence (Cornia, et.al. [1987] report that positive macroeconomic trends belie visible deterioration in social infrastructure) is not quantified, and therefore does not permit crosscountry comparisons or generalizations.

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[1] The methodological difficulty is that of understanding how the macroeconomic environment affects the sector: what happens within the sector? Aggregate data provide few answers. One must study the micro level of schools, households, and individuals.

[2] For example, a country study could follow a group of people from the preadjustment period through to the postadjustment period, and compare their education outcomes to those of a counterfactual group that did not go through adjustment.

Table II.1: Methodologies to analyze the impacts of adjustment on education

Methodology	Source	Number of Countries	Economic Indicators	Education Indicators	Conclusion
Before and after adjustment	Sahn	16	Public budget (real and % of GDP)	Education spending (real and share of discretionary public budget)	No clear impacts of adjustment
Fiscal duress	Gallagher	35	GDP growth	Education spending (share of total and discretionary public budgets) Gross enrollment rates (primary and secondary)	No clear impacts of adjustment
Adjusting versus Nonadjusting Countries	Kakwani, Makonnen, Van der Gaag	86	Public budget (total and discretionary as % of GDP) Per capita private consumption	Education spending (share of total and discretionary public budgets, GDP) Per capita spending Primary enrollment rates (gross and net) Growth of primary school teachers Student/teacher ratios	Intense adjustment related to declines in all education indicators
Adjusting versus Nonadjusting Countries	World Bank (1990a)	78	GDP growth Public debt Public deficit Savings, investment rates Per capita private consumption	Education spending (% of discretionary public budget and GDP) Per capita expenditures (annual change) Gross primary enrollment rate	Intense adjustment related to declines in all education indicators

2.04 Four sources evaluate how adjustment affected certain education indicators in the short term by establishing counterfactuals in order to compare (for a single group of countries) actual performance before adjustment with actual performance during adjustment, or alternatively (for two distinct country groups) actual performance observed during an adjustment program with actual performance in the absence of such a program. Table II.1 presents the respective methodologies, showing that in several instances this analysis is quite simple and arbitrary.

2.05 Sahn (1989) compares education indicators for countries "before" and "after" World Bank-supported adjustment (see box III.1). This methodology implies that any changes between the two periods are the result of adjustment lending, whereas any number of other factors could be responsible. In addition, Sahn does not compare countries that received adjustment loans to countries that did not. Gallagher (1990) compares "fiscally duressed" countries[3/] to nonadjusting countries (annex 5) in order to determine how both groups managed the education sector. Neither Sahn nor Gallagher find any strong evidence that adjustment has affected public education financing and enrollment rates, either positively or negatively (chapter III).

2.06 The most sophisticated methodology is presented by Kakwani, Makonnen and van der Gaag (1990), who define five categories of adjusting and nonadjusting countries (annex 4). However, the results may be biased because of data paucity, resulting in some categories for specific indicators containing as few as two countries. A later report (World Bank, 1990a) consolidates the country categories into three: early intensely adjusting (EIAL), other adjusting (OAL), and nonadjusting (NAL). Both reports associate adjustment lending with declining trends in public education financing, per capita expenditures, and gross primary enrollment rates.

2.07 Methodologies that compare adjusting to nonadjusting countries facilitate crosscountry comparisons of changes in the education sector where countries faced broadly similar conditions such as recession or World Bank adjustment lending. However, isolating the effects of adjustment measures from those of other influences remains difficult (box II.1). The differentiation between adjusting and nonadjusting countries may not be valid. Presumably the countries that adjusted were those that needed to do so, and therefore faced different economic conditions (internal and external) from those that did not need to adjust. For example, a high proportion of nonadjusting countries were middle-income countries. Furthermore, the World Bank methodology described above addresses only Bank-assisted adjustment, although some "nonadjusting" countries undertook major adjustment programs without Bank assistance (for example, Benin, Cameroon, and Sri Lanka).

[3/]Countries that were forced to adjust during the 1980s by sustaining reductions in real government expenditures and government expenditures as a share of GDP, with or without World Bank assistance.

BOX II.1: Isolating the effects of adjustment

Although the "before" and "after" periods can be tailored to the timing of adjustment in each country, change in a performance indicator in the program countries is attributed exclusively to program effects. However, during the 1980s the nonprogram determinants of performance varied widely over time and between countries. Thus the situation prevailing before the program is not a good predictor of what would have happened in the absence of a program.

The control-group approach examines changes in nonadjusting countries to estimate what would have happened in adjusting countries in the absence of programs. However, it assumes that all countries face the same external environment, and ignores the effects of preprogram and other country-specific characteristics on performance. The results may be biased if the external environment of program countries differs systematically from that of nonprogram countries. Finally, the approach requires a uniform definition of the period before and after adjustment, since the same period must apply to all countries.

The modified control-group approach adopted by the World Bank (1990a) minimizes the sample-selection bias and takes account of the changing external environment of each country. This approach recognizes the nonrandom selection of structural adjustment program countries, identifies the specific differences between adjusting and nonadjusting countries in the preprogram period, and then controls for these differences in comparing subsequent performance. To correct for the self-selection bias, the approach calculates the probability that a country will undertake an adjustment program based on lagged values of performance indicators (including external shocks, fiscal deficit, and dummy variables for concurrent IMF programs, world regions, and high debt), world nonprogram variables, and individual country characteristics.

Source: World Bank (1990a).

B. Data

2.08 Data Quality: Crosscountry comparisons between literature sources are difficult because sources do not use the same indicators or the same time period, and it is often difficult to determine which figures are more likely to be correct (box II.2). At times, differences result from discrepancies in definitions: for example, education spending as a percentage of GNP refers alternatively to public and private spending, to public spending, or to central government spending. Sources that provide average data for five-year intervals ignore annual changes in the intervening years that can be significant. Other sources ignore long-term trends dating back to the 1970s. Finally, the age-specific population data used to derive gross enrollment rates are based on data for fertility and infant mortality from the last reliable census and extrapolations using a presumed population distribution (Berstecher and Carr-Hill, 1990).

BOX II.2: Data quality

Compiling the data for two indicators in Zambia reveals discrepancies between sources. For example, Source 1 indicates that education's share of the public budget increased after 1980, whereas Source 2 suggests that education's share declined through 1983. Source 3 shows a serious decline in enrollment rates in 1980, whereas Source 4 describes only a marginal decline in 1981. Variation between the sources for a single year is eight percentage points. Discrepancies may result from differences in definitions or in methods of extrapolation. Conclusions in different sources may therefore contradict one another, and it is difficult to judge which data are more likely to be correct.

Education share of total government budget (%)

	1975	1977	1979	1980	1981	1982	1983	1984	1985
Source 1	11.5	13.8	12.1	8.9	11.0	13.0	15.2		
Source 2	17 (75-77)		14.2 (78-80)			13.8 (81-83)		14.2 (84-85)	

Gross primary enrollment rate (%)

	1970	1975	1980	1981	1982	1983	1984	1985	1986
Source 3	90	97	90			93	96	99	97
Source 4			98	97	98	101	103		

Sources: 1. Auerhan, et.al. (1985); 2. Colclough and Lewin (1990); 3. World Bank (1987a); and 4. World Bank (1988e).

2.09 Data Availability: An important obstacle to assessing the effects of adjustment policies on the education sector is the lack of disaggregate data. The literature on education and adjustment (both aggregate analyses and country studies) most frequently provides data on public education financing levels and enrollment rates. Data on quality and equity indicators are much more scarce, and information on factors that influence the demand for education is virtually nonexistent.

2.10 Data Aggregation: Many sources compare indicators for country groups to show crosscountry trends, but data coverage is inconsistent. First, the selection of indicators varies among reports. Second, the time period for which data are provided vary: some reports give annual figures, others give averages for periods of between two and ten years, still others average figures for "before" and "after" adjustment. Third, reports group countries alternatively by region (World Bank regions or geographic), by income level, or by differentiating "adjusting" from "non-adjusting" countries. Colclough and Lewin (1990) provide education sector statistics and trends for the 35 countries with gross primary

enrollment ratios of less than 90 percent in 1985. This group is selected because "these are the countries whose populations are the most disadvantaged, in terms of the goals of Education For All." Seldom do two reports provide figures for the same indicator, the same year, and the same group of countries. Often the selection is restricted by data availability.

2.11 Time Lags: Adjustment policies are relatively new (the first SAL was in 1980, the first Education SECAL in 1986). Education has a long gestation period, and the time lag before the impacts of adjustment-instigated changes become evident may be significant. In many cases the impacts of adjustment are still working their way through the education cycle. Many adverse effects of adjustment are said to be temporary results of transition, and the long-term effects are expected to be positive. Time lags are also evident in data collection efforts: UNESCO data (the principal source for crosscountry comparisons) are currently available only through 1987, and even these figures are incomplete for specific countries or years. Only 45 of the 70 adjustment borrowers (annex 1) received SALs or SECALs before 1987. UNESCO data thus do not provide any evidence on the education sector during adjustment for over one-third of all adjusting countries. Many of the other countries had not completed the adjustment process by 1987, and analysis of the available data can therefore only be incomplete.

2.12 Causality: The literature makes few attempts to establish causality between adjustment policies and changes in the education sector. Did the decline in public spending result from externally-induced recession and structural problems, poor management, or adjustment policies designed to offset economic difficulties? What is the counterfactual, i.e., were conditions better or worse than if the World Bank had not supported implementation of the adjustment process? Sahn (1989) states that adjustment lending often occurs in the face of severe economic crises that would precipitate radical changes in public spending even without the typical SAL conditionality. According to Chapelier and Tabatabai (1989), many countries that needed economic stabilization and adjustment (particularly those in sub-Saharan Africa) had already been through a protracted period of mounting economic stress, during which social services deteriorated, before they undertook adjustment programs. Most sources do not separate the impacts of deteriorating economic conditions (recession, inflation, and the debt crisis) from those of changes in macroeconomic policies to address these problems.

2.13 Another variable influencing the education sector, independent of adjustment policies, is government commitment. Griffin and Knight (1989) argue that given the need for adjustment, it was easier and more expedient to reduce expenditures on human development than on other central government budget items. Governments' willingness to allocate resources to education changed during the 1980s as a result of increasing unemployment and migration of the educated, qualification escalation unrelated to job skills, and uncertainty about the contribution of education to increased productivity. According to Lewin (1987), changing government commitment and tighter budgets outweighed pressure to increase education investment from growing social demand fueled by population growth, continued manpower shortages, the power of interest groups, and the ideology of free and universal education provision. These statements, however, are not supported with specific evidence.

2.14 Data Interpretation: The most common education indicators used in the reviewed literature are education spending as a share of the public budget or of GNP, and the gross enrollment rate. These indicators, by themselves, explain little. Whether or not a decline in education's share of the total public budget reflects specific government priorities depends on a number of factors:

- Debt burden: Few reports assess public education spending as a share of discretionary government spending (excluding interest payments).[4/] The growing debt burden may reduce all sectors' shares of the budget. For example, Fuller (1989) reports that debt service accounts for 38 percent of government recurrent spending in Malawi.

- Recession: A decline in education's share of GNP may result from a smaller public budget (as a share of GNP).

- Real expenditures: Figures on budget shares indicate priorities within the government budget, but do not reveal how real expenditures changed. If the budget grows, education's budget share could decrease even though real education expenditures increase, and vice versa. An important difficulty in estimating real education expenditures is the lack of a suitable deflator for nominal expenditures. The common practice of using the GDP deflator is highly questionable. For example, if food prices triple while all other prices remain constant, the GDP deflator will falsely suggest that real education expenditures declined. Determining an appropriate deflator is not trivial. Because the largest outlays in education are teachers' salaries, real wages should figure prominently in this deflator. If expenditures decline because teacher salaries are cut, education supply will not change unless teachers quit or teaching quality declines.

- Regional or local government financing: Public education financing figures often ignore regional and local contributions. If figures for education financing refer to central government expenditures only, they may provide little information on sector financing. For example, the bulk of education financing in Nigeria comes from local and state governments.

- Private financing: Figures for public education spending ignore the contribution from private sources that is quite significant in some countries (80 percent in Haiti). If private spending increased while public spending declined, total sector resources may have remained constant or even increased.

- Intrasectoral allocations: Figures for total education spending conceal changes in resource allocations by level of education (which subsectors were vulnerable or protected) and by function (recurrent versus capital, salaries versus materials).

[4/]Exceptions are Sahn (1989); Gallagher (1990); Kakwani, Makonnen, and van der Gaag (1990); and World Bank (1990a).

A declining share to capital spending may have implications for present or future enrollment rates. However, the effects depend on the original spending levels: capital spending may decline because construction tapers off once universal enrollment is attained, or because donors and local communities increasingly bear capital costs. A growing share of the education budget allocated to personnel costs could signal a deteriorating quality of education as materials become scarce while teaching jobs or wages are protected. But it could also indicate that textbook provision is increasingly financed by external sources.

2.15 Real expenditures per student are a function of changes in both the relative or absolute sector resource allocation and enrollments. Per student expenditures could decline although real public expenditures increase, if the number of students increases even more. Changes in real per capita education expenditures are not a reliable indicator of the impact of adjustment. If school enrollments grow faster than the total population, the increases in per capita education expenditures observed in several adjusting countries do not preclude declines in per student expenditures.

2.16 The effects of changes in financing on coverage, quality, and equity are not obvious. According to the World Bank (1990d), the effects of a decline in sector spending depend on: 1) the adequacy of the original level of sector spending, 2) the absolute, rather than relative, decline in spending, 3) the ability of the sector to recover expenditure losses in years of increasing government spending, and 4) the relationship of spending to the number of beneficiaries in the system (supply versus demand). Although reductions in public allocations to education may lead to school closure or quality deterioration, Berstecher and Carr-Hill (1990) point out that some governments only reduced available spaces (and expenditures) in response to a decline in the number of students registering. Furthermore, a decrease in real education spending does not necessarily induce sector decline, if wastage declines while equity and efficiency improve.

2.17 Enrollment rates trace changes in sector coverage, but do not indicate whether supply or demand has changed. In Ghana, for example, real education spending increased, but the increase in enrollments did not keep up with population growth, and enrollment rates declined. Finally, changes in compliance with or enforcement of official age limits may change the gross enrollment rate independent of any change in supply or demand. While repetition and dropout rates may change in response to changes in quality, these rates are also affected by other factors. For example, in a number of countries repetition rates are largely a function of national regulations, and dropout rates are significantly affected by perceptions of the opportunity costs and benefits of education.

III. THE EVIDENCE: MAJOR ISSUES

3.01 This section examines the treatment in the literature of major factors--capacity, coverage, quality, and equity--that relate to education supply and demand. Table III.1 summarizes the ways sources present education data, the major issues the data cover, and whether sources link trends or outcomes to adjustment measures. On the whole, appropriate methodologies have not been developed to analyze the impacts of adjustment programs on education. Likewise, the data are too crude to permit any meaningful inference regarding causality. Even when correlation is evident, the literature does not delve deeper to determine what happened, why did it happen, was the outcome intended, and is the direction of change positive or negative. Existing methodologies (annexes 3 and 4) associate declines in public education expenditures and gross primary enrollment rates with adjustment programs, but do not examine quality and equity indicators. The impacts of changes in financing and coverage on quality and equity are by no means obvious. Available case studies provide quality and equity indicators from the "adjustment period," but do not analyze how adjustment programs (distinct from recession or external shocks) affect education.[1/] Annex 1 contains nine case studies: each compiles available education sector data for a specific country and examines possible links to adjustment processes. Boxes throughout the chapter illustrate relevant issues and evidence from the case studies.

A. Capacity

3.02 During the 1960s and early 1970s, public education spending (by central and local governments) in virtually all countries rose considerably faster than either government revenue or GNP (Cornia, et.al., 1987). A UNESCO study describes adjustment as an acute phase of a longer crisis, and the expansion of the education system during the last decades as an "education explosion" (Duvieusart, 1990). Was this expansion sustainable? In many cases downward trends in public education financing began in the late 1970s.

3.03 Sahn (1989) examines public education financing in real terms and as a share of the government budget from before and after the first World Bank adjustment loan (box III.1). Gallagher (1990) compares average allocations of total and discretionary public budgets to education among fiscally duressed (adjusting) and other (nonadjusting) countries (annex 3). These simple analyses do not find any strong links between adjustment and public education financing. Gallagher concludes that reductions in social spending are associated with the general decline in total government spending that results from slower economic growth. However, two recent World Bank studies (Kakwani, et.al., 1990; and World Bank, 1990a) associate adjustment directly with declining public resources allocated to education: education's share of the public budget and GDP increased in all country groups except intensely adjusting countries after 1980 (annex 4).

[1/] For example, Aedo-Richmond and Noguera (1989); Cornia, et.al. (1987); Fuller (1989); Hinchliffe (1989), Hoppers (1989); and Kydd (1988).

Table III.1: Data presentation in the literature

Source*	Data presentation	Cross-country aggregations	Data linked to adjustment	Education issues covered: Capacity	Coverage	Quality	Equity
Colclough and Lewin	a) Time series data	Yes	No	X	X	(X)	(X)
	b) Case studies	No	Yes	X	X	X	X
Cornia, Jolly, Stewart	Case studies	No	Yes	X	X	X	X
Gallagher	Adjustment methodology	Yes	Yes	X	X	(X)	
Kakwani, Makonnen, van der Gaag	Adjustment methodology	Yes	Yes	X	X	(X)	
Lockheed, Verspoor, et.al.	Time series data	Yes	No	X	X	X	(X)
Sahn	Adjustment methodology	Yes	Yes	X	X	(X)	
World Bank (1988c)	Time series data	Yes	No	X	X	(X)	(X)

(X) indicates that issues are addressed, but to a lesser degree.

*Note: The list is not exhaustive, and covers only the principal sources cited in the text.

BOX III.1: "Before" and "after" World Bank-supported adjustment: No clear trends

Sahn (1989) compares average public education spending indicators during the three years preceding the first World Bank adjustment loan to those during a similar period after the loan in sixteen African countries. Education's share of public discretionary spending increased in eight of sixteen countries between the two periods, and declined in the other eight. Real education spending did likewise. Sahn finds no conclusive evidence to suggest that countries reduce government expenditures, either in real terms or as a share of the government budget, as a consequence of receiving adjustment loans. In countries where government education spending declined during the 1980s, the trend generally predated the beginning of the adjustment process.

However, some of the data raise serious methodological questions, for example the tremendous changes in real education expenditures for Ghana, Nigeria, and Sierra Leone. Because the indices are calculated from expenditures measured in US$, the changes may result primarily from currency devaluation. Devaluation is likely to have little impact on education supply, particularly at the primary level. These figures by themselves explain little.

	Education expenditure as % of discretionary government expenditure		Education expenditures (1980=100)	
	Before adjustment	After adjustment	Before adjustment	After adjustment
Burkina Faso	19.4	20.3	115.2	154.6
Côte d'Ivoire	19.4	25.2	116.0	129.5
Ghana	16.1	23.8	56.2	110.8
Kenya	20.0	22.9	91.1	114.1
Madagascar	19.6	18.3	95.9	89.4
Malawi	11.5	15.0	102.8	110.3
Mauritius	19.3	19.2	104.4	98.4
Niger	14.3	12.7	63.1	58.2
Nigeria	8.6	10.4	140.0	92.2
Senegal	24.6	20.2	100.0	102.3
Sierra Leone	17.2	11.1	115.4	57.8
Tanzania	13.9	13.6	99.9	91.5
Togo	22.4	15.3	124.5	99.5
Uganda	12.7	15.0	144.0	151.1
Zambia	16.5	13.8	109.5	93.0
Zimbabwe	23.4	23.5	154.3	165.2

Table III.2: Total long-term debt (% of GNP)

	1980*	1985	1988
Intensely adjusting countries (IAL)	35.1	82.4	82.9
Other adjusting countries (OAL)	32.1	51.5	70.6
Nonadjusting countries (NAL)	27.1	57.6	53.1

*1980 figures refer to public long-term debt only.

Source: World Development Reports (1982, 1987, 1990).

Table III.3: Education financing (% of discretionary public expenditures)

	Countries	1975	1980	1986
EIAL	10	16.9	17.6	16.2
OAL	5		11.7	12.7
NAL	5	8.7	10.9	12.9

Source: World Bank, 1990a.

3.04 Why did education's share of the budget decline in adjusting countries? One explanation is that debt service payments crowded out other public spending. Countries that adopted adjustment programs (IAL and OAL countries) already faced higher debt burdens in 1980 than did nonadjusting countries (table III.2). Since over 90 percent of long-term debt is public in all developing country groups,[2/] nonconcessional adjustment borrowing increased the debt burden and contributed to a resource transfer toward debt payments and away from other publicly financed sectors. The debt burden increased during the 1980s for all country groups, but the increase was more rapid for adjusting countries, particularly for intensely adjusting countries. At the same time, GDP growth (and government revenues) stagnated or declined in many countries. Table III.3 suggests that governments "protected" education during the early 1980s--education's share of the discretionary public budget (i.e., excluding debt service payments) increased slightly. However, in intensely adjusting (EIAL) countries, the growing debt burden after 1980 outweighed attempts to shelter the education budget. Box III.2 describes the case of Tanzania, an intensely adjusting country. Finally, currency devaluations may induce shifts in the allocation of public resources towards sectors that are more import- or foreign exchange-intensive (including debt service) than education.

3.05 A second explanation for education's declining public budget share is that a change in relative prices in turn alters relative resource allocations, independent of any concrete reallocative decisions. For example, because education is a relatively labor-intensive sector, any across-the-board civil service wage cut will, ceteris paribus, reduce education's share of the public budget relative to less labor-intensive public sectors (Schwartz and Stevenson, 1990).

[2/]Calculated from World Debt Tables.

BOX III.2: The debt service squeeze in Tanzania

Tanzania (an intensely adjusting country) reduced the public budget allocation to education and to other public sectors between 1984 and 1988, while increasing the debt service allocation continuously to over one third of the public budget. Whenever the budget expanded, debt service constituted most of the increase. In real terms, education expenditures decreased, other public expenditures increased slightly, but debt service more than doubled. Between 1986 and 1987, although education's share of the total public budget fell from 16 to 14 percent, its share of the discretionary public budget (excluding debt service) rose from 21 to 24 percent. The debt burden crowded out education expenditures and overwhelmed the government's efforts to favor education in the budget allocation process, and real education expenditures declined.

Index of real public expenditures by sector (% of public budget)

	1984	1985	1986	1987	1988
Debt Service	100 (18%)	114 (20%)	126 (24%)	176 (28%)	256 (34%)
Education	100 (16%)	92 (14%)	96 (16%)	95 (14%)	98 (12%)
Other	100 (66%)	102 (66%)	87 (60%)	99 (58%)	111 (54%)
Total	100	103	95	112	135

Source: Berstecher and Carr-Hill (1990).

3.06 Figures that describe changes in education's share of the public budget or GNP alone do not indicate whether education was protected or vulnerable relative to other sectors in the allocation of public resources. Comparing intersectoral allocations over time reveals government priorities during periods of recession and adjustment. One method is to calculate the coefficient of vulnerability (Hicks and Kubish, 1984): the ratio of the percentage change in education spending to the percentage change in total public spending during the adjustment period, defined only for countries where government spending fell. The coefficient is greater than one if the sector was vulnerable, less than one if the sector was protected, and negative if the sector was highly protected. For example, the coefficient for Guinea during the adjustment period 1986-89 is 0.64. Although real education spending fell by 25 percent over the period, education was "protected" relative to the rest of the government budget, which fell by almost 40 percent in real terms. In Malawi, the coefficient of vulnerability is 5.5, indicating a high degree of vulnerability (all government spending fell 3.2 percent in real terms over the adjustment period 1982-88, but education spending fell by 17.4 percent).

3.07 Cornia, et.al. (1987) compare government expenditure cuts across regions from 1979-83 (table III.4). They define the education sector as: "vulnerable" if expenditure cuts in education exceed aggregate percentage cuts; "protected" if expenditures in education

are cut by a smaller percentage than the aggregate spending; and "highly protected" if real education expenditures increase while aggregate government expenditures decline.

Table III.4: Government expenditure cuts in education, 1979-1983
(% of cases by region)

Region	All	Africa	Asia	EMENA	LAC
No. of countries	(57)	(16)	(8)	(13)	(20)
Vulnerable	45	38	25	38	65
Protected	22	24	50	27	5
Highly Protected	33	38	25	35	30
Total	100	100	100	100	100

Source: Cornia, et.al. (1987).

3.08 Because the data predate all but the earliest adjustment loans, they reflect government priorities in making budget cuts during economic recession rather than during adjustment. Most countries (67 percent) reduced education spending during the recession period from 1979-1983. In 22 percent, the education reduction was less in percentage terms than the aggregate reduction. However, in 45 percent, education was vulnerable (Cornia, et.al., 1987). Did these patterns persist during the adjustment period? Why was education particularly vulnerable in LAC, but particularly protected in Asia?[3/] Were there systematic differences in adjustment processes between regions?

B. Coverage

3.09 Several authors link Bank adjustment lending to declining coverage in the short term. Gallagher (1990) argues that "trends in primary school enrollments very much reflect spending trends, rising in most instances between the mid 1970s to the beginning of the 1980s and slowing or declining since then." However, the evidence he presents is unclear: fiscal duress is negatively with gross primary enrollment rates in Africa and Asia, but not in EMENA or LAC (annex 3).[4/] Kakwani, et.al. (1990) find that gross primary enrollment rates increased in all country groups from 1970 to 1985 except among intensely adjusting (IAL) countries. Furthermore, the rate of growth of primary enrollments declined in IAL countries after 1980, although total enrollments continued to increase in all country groups.

[3/]Asian countries, compared to LAC countries, tend to have smaller debt service obligations, higher economic growth, and smaller shares of the public budget devoted to education.

[4/]Nonpublic sources of financing tend to constitute a significant proportion of education expenditures in EMENA and LAC (but less so in Africa and Asia), and can compensate for declining public expenditures.

BOX III.3: Education spending and enrollment rate time trends: Costa Rica and Ghana

Do public financing of education and enrollment rates follow similar time trends? Data from Costa Rica and Ghana tell different stories. Education's share of the public budget and GDP in Costa Rica declined from 1981 to 1983, increased slowly after 1983, but in 1987 remained below the 1980 level (real expenditures also declined). Public education spending as a share of GDP is also below the 1983 level. Enrollment rates declined between 1980 and 1985, apparently in conjunction with declining public financing.

	1980	1981	1983	1985	1987	1988
% of public budget	14.9	15.1	12.1	12.7	13.7	12.9
% of GDP	6.7	5.8	5.0	5.0	5.0	4.8
Gross primary enrollment rate	106%			101%		
Gross secondary enrollment rate	47%			41%		

Source: World Bank (1990d).

In Ghana, trends in financing levels and enrollment rates do not coincide. Ghana suffered a severe recession in the early 1980s, when central government spending on education declined markedly (both real expenditures and central government education spending as a proportion of the public budget and GDP). Enrollment rates at both the primary and secondary levels suffered during the 1980s despite rising central government spending after 1981. The increase in expenditures in 1986 resulted from a wage increase for teachers, which was not intended to expand coverage. The enrollment rate declined because population growth exceeded the rate of expansion of the school system.

	1975	1980	1981	1982	1984	1985	1987	1988
% of public budget	20.6	22.0	17.1	18.7	20.2	18.0	23.9	25.7
% of GDP	4.5	2.4	1.8	2.1	2.0	2.4	3.3	3.5
Real expenditures (index)	174.5	100.0	73.6	78.0	78.3	98.8	147.7	167.0
Enrollment rates:								
Gross primary	71%	80%		77%	76%	72%	71%	
Gross secondary	37%	41%		38%	41%	39%	40%	

Source: World Bank (1990c).

3.10 The coexistence of adjustment programs and declining enrollment rates does not imply causality, nor are the means through which adjustment policies translate into changes

in sector coverage apparent. Country studies (box III.3 and annex 1) suggest that public education financing is not immediately and directly associated with enrollment rates in all cases. Gross enrollment rates declined in Korea despite increasing public education expenditures, and increased in Ghana and Zambia even though public spending declined. Enrollment rates may more accurately reflect changes in demand for education resulting from deteriorating economic conditions and declining household incomes. For example, families may withdraw their children from school in order to reduce education spending, and to have the children contribute to household income (Fuller, 1989). Declining enrollment rates may result from deteriorating labor market conditions during recession and adjustment, as a response to lower perceived private returns to education investment. In order to assess the impact of adjustment measures on education coverage, it is essential to examine the supply and demand factors that caused changes in enrollment rates.

C. Quality

3.11 A complete analysis of changes in the quality of education requires information for a variety of indicators: per student expenditures (recurrent, and on materials), sector budget shares (recurrent versus capital spending, salaries versus materials), and internal efficiency (repeater and dropout rates, test scores). Coverage of these indicators in the literature is inconsistent, incomplete, and inconclusive regarding the impacts of adjustment programs on education quality. Available evidence must be interpreted with care, as the links between adjustment policies and quality indicators are difficult to ascertain.

Table III.5: Real public education spending per capita (% annual change)

	Countries	1970-80	1981-84	1985-87
EIAL	10	10.8	1.1	0.8
OAL	5		0.5	5.5
NAL	3	6.7	0.3	9.7

Source: World Bank (1990a).

3.12 Per capita and per student spending: Insofar as adjustment measures contributed to lower public education expenditures while enrollments increased, adjustment produced declines in real public expenditures per student. For example, average per capita education expenditures increased in all country groups except intensely adjusting countries after 1980 (annex 4). Table III.5 indicates that although annual growth in real government education spending per capita was extremely slow for all country groups from 1981 to 1984, the growth rate accelerated during the 1985-87 period for all except intensely adjusting (EIAL) countries. However, lower per student expenditures may not reduce the quality of education if compensating measures increase efficiency in resource use. At the same time, increasing expenditures per student do not necessarily indicate a positive impact on the sector. In Ghana (box III.4), the increase in per primary student expenditures from 1983 to 1988 would have been small or even negative if enrollment rates (box III.3) had not fallen. Another influence on education quality which is receiving increasing attention in the literature, but little quantification, is nonsalary expenditures per student, i.e., expenditures on materials and supplies.

BOX III.4: Per student expenditures: Intrasectoral trends in Costa Rica and Ghana

In Costa Rica, public per student expenditures dropped drastically between 1980 and 1982. Although they rose gradually after 1982, in 1986 they remained below 1980 levels. Furthermore, the breakdown by level of education shows that the tertiary level did not suffer as much as the primary level: per student spending declined less, and rose faster. Although primary and secondary spending were reduced by the same proportion through 1982, per student secondary spending increased more rapidly after 1982.

Costa Rica	1980	1981	1982	1983	1984	1985	1986
Primary and Preschool	100	71	48	53	58	59	65
General Secondary	100	70	47	55	62	67	74
Vocational Secondary	100	70	46	54	60	68	77
Tertiary	100	86	61	65	76	77	90

Source: World Bank (1989c).

Real public expenditures per student also declined at all levels in Ghana from 1970 to 1980, but declines were greater for secondary and tertiary education. Primary education was relatively protected. Severe declines date from well before the first World Bank adjustment loan in 1983. In fact, per student expenditures (particularly primary) have improved since 1983, partly as a result of enrollments growing less rapidly than the school-age population.

Ghana*	1970	1975	1980	1983	1985	1988
Primary	161	100	51	39	61	98
Secondary	76	100	50	30	44	58
Tertiary		100	33	17	52	61

Source: World Bank (1988c). *Because of the difficulties in combining figures from different sources, these figures are not exact and are intended only to indicate likely trends.

3.13 Capital versus recurrent spending: Whether or not capital and recurrent spending levels are adequate is determined in part by how well existing facilities serve the current population and meet future needs. Gallagher (1990) finds that the share of investment in total education spending declined between the mid-1970s and the mid-1980s in 19 of 25 developing countries. However, donors played an increasing role in financing capital investments in Africa, and capital spending in countries such as Botswana and Thailand declined after universal primary education was achieved (when budgetary needs were limited to construction and equipment necessary to keep pace with population growth).

BOX III.5: Teacher salaries

Many African countries faced severe economic recessions beginning in 1980. In most cases, real average teacher salaries declined after 1980. However, Malawi and Zambia protected teacher salaries relative to manufacturing worker salaries (Malawi only after 1983), thus encouraging teachers to stay in the sector. But in Kenya and Zimbabwe, teacher salaries declined relative to wages in the manufacturing sector. Such changes in relative wages could induce qualified teachers to seek employment in other sectors, with negative impacts on the quality of education. The literature does not analyze the impacts of changes in relative wages on teacher employment patterns.

Index of real average teacher salaries

	1980	1981	1982	1983	1984	1985
Kenya	100	98	84	73	68	71
Malawi	100	96	99	96	94	96
Zambia	100	83	89	113	88	
Zimbabwe	100	92	89	72	55	63

Ratio of average salaries of primary teachers to manufacturing workers

	1980	1981	1982	1983	1984	1985
Kenya	100	99	92	82	77	86
Malawi	100	95	73	100	119	145
Zambia	100	100	114	158	148	
Zimbabwe	100	84	78	68	56	61

Source: Zymelman and DeStefano (1989).

3.14 According to Lewin and Berstecher (1989), between 1975-1980 and 1980-1983 the recurrent share of education spending in developing countries increased more often than it decreased. Changes in recurrent spending (teacher salaries) can affect both teacher morale and supply (both the total number and individual qualifications), and in turn influence education quality. Although in many countries the share of the education budget devoted to personnel costs rose, real teacher salaries often declined (box III.5). Comparing trends in teacher salaries to overall wage trends (declining in real terms in many countries) indicates whether the sector was vulnerable or protected during adjustment. In the long run, if teacher salaries fall below "comparable" wages, the quality of teaching will deteriorate as the best teachers shift to other occupations. Relatively high teacher salaries encourage qualified teachers to stay in the sector. However, in order to pay higher wages the government may reduce spending on other education budget items that affect the quality of education as well: teaching materials, construction, or maintenance.

3.15 Other quality indicators: Several other indicators describe changes in education quality. Kakwani, et.al. (1990) use student/teacher ratios as a proxy for education quality, implying that a lower ratio in IAL countries (35 in 1980-85 versus 39 in 1970-75) reflects a positive quality effect from the adjustment process. On the other hand, Lockheed, Verspoor, et.al. (1990) argue that class size reduction in the 25-45 range in fact has little impact on education quality. Declining student/teacher ratios in adjusting countries suggests only that teacher recruitment is much less responsive to macroeconomic shocks (recession or adjustment) than is the demand for education. Internal efficiency indicators such as test scores, repeater rates, dropout rates, completion rates, and years to produce a graduate also reveal quality changes. Two reports provide internal efficiency indicators for a large number of countries (Lockheed, Verspoor, et.al., 1990; World Bank, 1988c), but do not examine the impact of adjustment programs. On average, repeater and completion rates (in primary education) improved slightly for all developing countries.

BOX III.6: Education equity--rural versus urban

Morocco offers a unique comparison of primary education indicators between rural and urban areas. Trends during the 1980s were similar for the two areas, except for the gross enrollment rate: the urban rate declined and the rural rate increased. By building schools and houses for teachers in rural areas, Morocco's first Education SECAL (1986) sought to narrow the gap between urban and rural areas, and to improve rural and female enrollment rates. The gap between the two areas remained significant in 1988 according to all three indicators. It may be too soon, after only two years of sector adjustment, for equity improvements to be measurable.

	1980		1988	
	Urban	Rural	Urban	Rural
Student/teacher ratio	40	33	30	22
Gross enrollment rate (%)	124	49	96	52
Girls as % of enrollments	45	24	46	29

Source: World Bank (1989a).

D. Equity

3.16 Adjustment programs that alter education financing also affect equity. For example, changes in the intrasectoral allocation of public resources by level affect education supply and demand, particularly with respect to the poor who benefit the most from basic education. The literature provides only country-specific evidence (annex 1). Costa Rica cut per student expenditures in primary education more than in secondary or tertiary education. Ghana protected per student primary spending, although enrollment growth did not keep pace with population growth (box III.4). Several sources mention that the effects of decreasing public financing may be offset by increasing contributions from user fees and

private sources. On the other hand, Gallagher (1990) argues that when national economic growth slows, the private sector, communities, and individuals also have fewer resources, and that user fees may reduce the demand for education if people cannot afford to pay. Public subsidies to private education decline in declining budgets, further hampering nongovernment provision of education.

3.17 Breaking down enrollment rates by gender, region, or income level indicates the equity impacts of adjustment measures. The most widely-cited equity indicator is the female (versus male or total) primary enrollment rate. Adjustment appears not to have influenced equity: female enrollment rates continued to approach male enrollment rates during the adjustment period (annex 1). Although the literature emphasizes that adjustment disproportionately affected the poor, comparisons between rural and urban areas (box III.6) or household income levels are scarce.

E. What evidence is missing?

3.18 Data for education during adjustment are scarce and inconclusive. Although public education financing and gross enrollment rates declined in intensely adjusting countries, the overall impacts of these trends on the sector, and particularly on quality and equity, cannot be determined because of data and methodology limitations. Sources focus on macro (public financing levels) and micro (per student expenditures) effects of adjustment policies on the supply of education. At the macro level, the supply of education in most countries is determined by the level of public funding. But sector financing data often describe only central government spending, and neglect local government or private resources. The impacts of changes in education resources on quality and equity are not obvious. They depend on the level of inefficiency in the system (a major focus of sector reform efforts), and on intrasectoral allocations to recurrent versus capital budgets, by function, and by level of education. Sources rarely break down sector financing figures according to these categories.

3.19 General conclusions about macro (income distribution) or micro (household earnings, costs and expectations) effects on the demand for education are unsubstantiated statements. Sources seldom include indicators for factors (other than public education expenditures) that influence the demand for education, for example income distribution, real and opportunity costs of education, and potential returns from education. They also provide little information regarding indirect impacts of adjustment measures on children's learning ability through changes in health and nutrition. Much of the relevant information must be obtained through household surveys.

3.20 Although education quality and equity data are extensive in particular country studies (boxes III.4-III.6), for most countries the evidence is scarce and not linked explicitly to adjustment measures. Internal efficiency indicators (repeater rates, dropout rates, and test scores) provide information on changes in education quality, but are not used extensively in the adjustment literature. In addition, few sources examine equity indicators to address the impacts of adjustment measures by region, income level, and gender.

IV. CONCLUSIONS

4.01 How did the education sector adjust during the 1980s, in response to economic shocks and macroeconomic measures? Did education suffer? Did education suffer more than other sectors? The problem is more important than simply determining adjustment's "guilt" or "innocence." In order to design and implement appropriate interventions, donors, borrowers, and policymakers need to know how macroeconomic and sector adjustment, both as on-going processes and as deliberate responses to discrete circumstances, affect one another. It is particularly important to determine the likely effects of policy reforms on sector financing, and in turn the effect of changes in financing on output, quality, and equity. General trends of declining education spending and enrollment rates since the early 1980s or even before are apparent, particularly in Africa but also in LAC. The literature suggests that declining trends during the "adjustment" period (post-1980) imply causality, and hypothesize about how macroeconomic or sector adjustment policies translate into sector effects. However, concrete evidence that explains how the process of sector adjustment is linked to sector or macroeconomic reforms and that provides specific evidence supporting general statements is lacking.

A. Dynamics of adjustment policies

4.02 Public budget retrenchment during periods of recession, fiscal austerity, and managed adjustment is the principal form of sector adjustment described in the literature. Real education spending and education's share of the public budget declined in several countries, particularly where the debt burden grew. But education spending was seldom cut more than other public sector budgets (excluding defense). The most disturbing evidence is that public education spending and primary enrollment rates declined on average in intensely adjusting countries after 1980, while rising in all other country groups (Kakwani, et.al., 1990). But even these trends are not a priori bad and need to be investigated in more depth: to what extent were declining resources allocated more efficiently, and did internal efficiency improve to offset declining gross enrollment rates? It is important to note that declines in financing in most cases date from well before the beginning of World Bank-assisted adjustment. In a few cases adjustment coincides with rising public education resources.

4.03 One commonly-recommended set of adjustment measures seeks to promote more effective resource allocation and utilization in the education sector, for example by reallocating resources from higher to primary education. Even if total resources decline, budget rationalization (determining core investment priorities, defining a standard budget process, eliminating ghost teachers) can mitigate the impact of a decline in overall resources by increasing the efficiency of resource use in order to improve sector performance and output.

4.04 Another set of measures aims at cost recovery, particularly in secondary and tertiary education. By introducing or increasing user fees, reducing student subsidies, and increasing community participation in school construction and maintenance, total education spending can increase or remain constant even though public spending declines, with no

negative impacts on the quality of education. However, cost recovery schemes have administrative and equity implications: user fees may reduce attendance by the poor unless effective targeted scholarship programs compensate poorer students. Incomplete or inequitable fee collection only exacerbates existing underfinancing and inequity. Berstecher (1988) suggests that declining financial capacity of families to demand and pay for services during austerity and recession limits the efficiency of cost recovery measures. Little is known about the impact of cost recovery measures on education supply and demand.

4.05 Finally, privatization can mobilize nongovernment resources for education to compensate for declining public resources. Chile pursued this course with some success: private enrollments rose although only in subsidized private schools. Similar to cost recovery measures, privatization may reduce enrollments among poorer students who cannot afford to pay for education services, unless private schools supplement (rather than replace) public schools.

B. Data collection efforts

4.06 The difficulties of separating the costs of adjustment from the costs of external shocks, poor policies, or not adjusting, imply a continuing need for careful monitoring and analysis. To analyze the process through which adjustment affects the education sector, time series data are necessary for a number of years before, during, and after (if possible) adjustment. Data collection and monitoring efforts must focus systematically on a few key indicators that measure aspects of education supply and demand. Expenditure data should measure more than the absolute and relative allocation of public resources to the sector, for example private, community, and local or regional government financing. Sector resources should be categorized by function (capital versus recurrent), by purpose (salaries, supplies, maintenance), and by level of education. Data on income distribution, the potential returns to education, and the opportunity and private costs of education are necessary to understand education demand.[1/]

4.07 Existing case studies use several of these indicators, but never in a complete or systematic fashion. Collecting the above information is a massive undertaking, and may only be feasible in a few selected country studies. In the absence of comparative dynamics models, crosstabulations of indicators for a given country show how indicators are interrelated, and thus help explain how the sector has adjusted. Given country-specific initial conditions, shocks, and adjustment packages, country studies are the most effective framework for analyzing the adjustment process.

4.08 Several research programs have begun data collection efforts that focus on indicators relevant to the dynamics of the adjustment process in particular countries. The Living Standard Measurement Surveys (LSMS) collect data on household income and

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[1/]Additional information is useful in evaluating changes in quality and equity, for example: changes in health and nutrition that affect children's learning ability; intake, repeater, and dropout rates, as well as student performance on standard exams; enrollment rates broken down by region, gender, and income level.

behavior. Surveys assess trends in economic and social status in order to identify links between adjustment policies and changes in socioeconomic conditions of particular groups (Serageldin, 1989). Changes in socioeconomic conditions in turn affect the macro and micro demand for education. Household and village surveys also collect information on educational attainment, schooling expenses, and school character and location. The Social Dimensions of Adjustment (SDA) Program is undertaking similar household and community surveys in a number of African countries. The SDA program was launched in 1987 as a joint venture between the UNDP Regional Programme for Africa, the African Development Bank, and the World Bank.

C. Questions for further research

4.09 In conclusion, reliable evidence on the effect of adjustment policies on the education sector is limited. There appears to be a causal link between adjustment and education, but the nature of the link varies widely and is poorly understood. For example, evidence of reductions in public expenditures during adjustment is pervasive, but there is considerable uncertainty regarding the effects of declining public financing on education. Explanatory models are poorly specified, and they rely on a weak database. As a result, it is difficult to determine causality, i.e., to isolate the specific effects of adjustment policies. Furthermore, the implications of changes in financing for education quality and equity are unclear.

4.10 Further research and analysis that focuses on process monitoring is critical. For example, the database can be improved by monitoring key education indicators during the adjustment process. Research should seek to complement existing comparative statics assessments with analyses of the dynamics of sector adjustment. Particular questions for further research that have important implications for the design and implementation of adjustment programs are given below. But even in the absence of precise answers, evidence suggests probable links between adjustment measures and the education sector. Progress is evident in the design of World Bank adjustment lending, but much more needs to be done to address education sector issues.

- How do macroeconomic policies, particularly changes in public expenditure levels, affect the supply of education? How do changes in supply in turn affect coverage, quality, and equity in the education sector?

- How is contraction in the education sector managed--what are the dynamics of budget cuts among different subsectors of education? What political forces promote or impede adjustments? If resource transfers from higher to primary education are widely recommended, why are they not implemented? How, if at all, can adjustment lending affect institutional bottlenecks?

- Is education protected or vulnerable relative to other sectors during periods of fiscal retrenchment, increasing debt, or civil service reform? Does education vulnerability vary by region or income level? If differences exist, can they be explained by differences in the adjustment process between country groups?

What types of policies or conditions enable a country to protect education (i.e., deliver a reasonable level of service), and specifically basic education?

To what extent have local government, community, private, or household resources replaced declining government resources? How do decentralization and cost recovery in turn affect coverage, quality, and equity?

How and why has demand for education changed during adjustment? How do changes in incomes (the household's or individual's ability to invest in human capital), the opportunity cost of attending school, private returns to investing in education, or health and nutrition affect coverage, quality, and equity?

ANNEX 1: CASE STUDIES

5.01 The nine case studies include the countries from each World Bank region (Africa, Asia, EMENA, LAC) for which data coverage is most complete: Chile, Costa Rica, Ghana, Korea, Malawi, Morocco, Philippines, Turkey, and Zambia. Each case study compiles available education sector data for a specific country and examines possible links to adjustment programs. A table summarizes available evidence on education indicators for each country from all sources. Because sources often disagree over exact figures, but rarely over general trends, the tables are intended to indicate only likely trends.

CHILE

5.02 Chile introduced major education reforms during the early 1980s, concurrent with other reforms to increase privatization and reduce the role of state, but did not receive any Bank adjustment loans until 1986. Severe economic dislocations began in the early 1970s, accompanied by socio-political conflicts. Chile's response to the 1975 world recession and terms of trade problems was to increase foreign borrowing. Chile received World Bank SALs in 1986, 1987, and 1988. SAL conditionality focused on reducing tariffs and ending wage indexation (that is, controlling the growth of civil service salaries). Unfortunately, little data is available for the period after World Bank-assisted adjustment began.

5.03 Chile is often cited as an example of a country that protected the poor without undermining the adjustment process, particularly with respect to child nutrition (Nicholas, 1988). This protection did not extend to the education sector. After 1974, Chile reduced the share of government resources devoted to education, although public spending was simultaneously redirected from universities to the pre-school, primary and intermediate levels. The increase in per student expenditures after 1980 was aided by declining primary enrollment rates.

5.04 Increasing resources to primary education may be responsible for improving repeater rates at this level. However, primary enrollment rates worsened as a result of deterioration in economic and nutritional status at the household level. Families could not afford materials, and the school feeding program was reduced in 1975-76. Education coupons replaced state-sponsored education. But in times of recession, poorer households cashed in their coupons rather than spend them on schooling (United Nations, 1988), suggesting that the opportunity cost of education rose. Therefore, despite continuing public subsidies, the emphasis on private schools may have been detrimental to school attendance by poorer students.

5.05 Beginning in 1980 schools were transferred to municipalities. They continued to receive government subsidies, although subsidies were difficult to maintain during the austerity period from 1982 to 1986. Quality declined in municipality-operated private schools because teacher salaries were lower and resources were limited, especially in low-income communities. Test scores declined during the 1980s in all subjects. The allocation of state subsidies encouraged private schools to be more concerned with pupil numbers than

with standards. Social class background increasingly determined education and career opportunities through the segmented educational system (Aedo-Richmond and Noguera, 1989).

Chile: education indicators

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Finance:										
% of public budget		8.2	9.1	9.6	8.4	7.5	5.4	7.5		
% of GDP		3.1	3.4	4.2	3.6	3.4	2.5	3.3	3.1	
real expenditures (index)	95	108	120	127	111					
Intrasectoral finance:										
recurrent budget share (%)	94	95					99			
primary share of budget (%)	35	46	48	51	53			51		
higher share of budget (%)		34						3		
Output (enrollment rates--%):										
gross primary	106	105	102	100	99	96	95			
net primary		90					89			
gross secondary		53					69			
Quality:										
per student spending (index)	48	100					115			
test scores: math (index)						100				94
test scores: Spanish (index)						100				90
primary repeaters (%)			17			15				
primary dropouts (%)	6	5	9	3	5	5				
Equity:										
% primary students female	49	49					49			

5.06 Chile undertook major education sector reforms without sector adjustment loan assistance from the World Bank. Data indicate that enrollment rates declined while the quality of education itself deteriorated. The data cover only the period preceding World Bank SALs, and therefore any trends are the result of economic conditions and government policies rather than effects of controlled adjustment. The effects of adjustment lending on the education sector cannot yet be assessed.

COSTA RICA

5.07 Costa Rica adopted a Bank-assisted adjustment program (beginning in 1983) that did not explicitly target education but nevertheless included conditionality with direct implications for sector employment and wages. The country underwent a public sector-

led expansion in the 1970s, but deficits were only sustainable as long as foreign financing was forthcoming. In the early 1980s international conditions deteriorated, foreign financing dried up, and Costa Rica suffered its worst recession in 30 years. In 1982 GDP fell by over 7 percent, and the annual rate of inflation was 90 percent. Costa Rica received an exports development SECAL in 1983, followed by SALs in 1985 and 1989. SAL conditionality included a freeze on public sector employment, controls on the growth of civil service salaries, and strict budget control allocation by the Ministry of Finance.

Costa Rica: education indicators

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Finance:										
% of public budget		14.9	15.1	13.5	12.1	12.2	12.7	12.8	13.7	12.9
% of GDP		6.7	5.8	4.8	5.0	5.0	5.0	5.1	5.0	4.8
real expenditures (index)	69	100					59			
Intrasectoral finance:										
capital budget share (%)		28		13		10		9	8	
primary share of budget (%)	37	33						37		
higher share of budget (%)		34						40		
Output (enrollment rates--%):										
gross primary		106		106			101	104	100	
net primary		89					84			
gross secondary		47					41			
gross tertiary				21				23	25	
Quality:										
per student spending (index)										
primary		100	71	48	53	58	59	65		
secondary		100	70	47	55	62	67	74		
higher		100	86	61	65	76	77	90		
primary repeaters (%)	7	8					11			
primary promotions (%)	89	90		84		86		86		
secondary promotions (%)	67	66		54		57		54		
Equity:										
% primary students female	49	48					48			

5.08 The greatest declines in public education spending occurred during the recession and austerity period of the early 1980s. Costa Rica protected primary education's share of the budget during the recession and austerity period of the 1980s, but did not reallocate resources from higher education. Government efforts were not sufficient as real education spending levels (total and per student) declined tremendously. The primary enrollment rate

did not change much, but deteriorating education quality and equity may have serious implications for Costa Rica's education system over the long term. The literature does not assess the effects of adjustment on the education sector, despite relatively good data that are as recent as 1988 and that include quality and equity indicators. The 1985 SAL did not explicitly target education and apparently did not influence deteriorating trends.

5.09 Education spending as a percentage of total government spending and GDP declined from 1980 to 1986. Real public education expenditures were lower in 1985 than in 1975. However, the coefficient of vulnerability for education (the ratio of the change in public education spending to the change in total public spending) between 1980 and 1985 of 0.75 suggests that education was protected relative to total government spending during a period of declining public expenditures (World Bank, 1990d).

5.10 Because real education spending fell while enrollments rose (by less than one percent annually from 1980 to 1985), real per student education expenditures declined by one-third from 1980 to 1986. The greatest declines were from 1979-1982, but expenditures in 1986 had not yet recovered their 1980 levels. Within the recurrent budget, teaching materials received less than 0.5 percent of the budget. Repeater and promotion rates worsened after 1980, and the difference between the number of years to produce a primary graduate and the number of years in the system increased from 1.2 in 1980 to 1.8 in 1985. Deterioration continued throughout the decade, although not as rapidly after 1985. Primary education's share of the public education budget increased after 1980 but remained far below the 1970 level of 51 percent.

GHANA

5.11 Economic mismanagement and adverse external developments (deteriorating terms of trade) during the early 1980s together were responsible for declines in production in all sectors of the economy, especially exports and food. In 1982 and 1983, prolonged drought, the sudden influx of one million Ghanaians from Nigeria, and the falling price of cocoa aggravated a critical shortage of foreign exchange, high inflation, and an increasingly overvalued exchange rate. Real GNP and GNP per capita were lower in 1984 than in 1974, reaching their lowest point in 1982.

5.12 In addition to a macroeconomic adjustment program, Ghana simultaneously undertook education sector adjustment with Bank assistance. The government introduced an adjustment program in 1983 with World Bank and IMF support. IMF stand-by agreements coincided with the first World Bank adjustment operations (import and export development SECALs in 1983, 1984, and 1985). SECAL conditionality included a 60 percent increase in civil service salaries. Other World Bank adjustment loans followed annually through 1990 (SALs in 1987, 1989, 1990). SAL conditionality emphasized civil service reform (retrenchment and wage controls--arresting the SECAL policy of wage increases) and budget rationalization, including a review of non-wage recurrent expenditures and the development of budget guidelines for recurrent expenditure allocations in education. Reforms also emphasized the rehabilitation of physical and social infrastructures. Ghana is the archetypal education sector adjustment case, with two

education SECALs (1987 and 1990) totalling $84.5 million. The first education SECAL supported major restructuring of the education system, a reorientation of expenditures to primary education, teacher training, retrenchment of nonteaching staff, a freeze on teaching posts, and reduced subsidies. The second reinforces these reforms and extends them to the secondary level.

Ghana: education indicators

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Finance:										
% of public budget	18.7	17.2	13.4	20.2	18.7	19.1	18.0	23.9	23.9	25.7
% of GDP	6.0	3.1	1.8	2.1	1.0	1.0	2.6	3.3	3.3	3.5
real expenditures (index)	175	100	74	78		78	99	143	148	167
Intrasectoral finance:										
recurrent budget share (%)	78	56					97			
salary budget share (%)	57					54		74		
primary share of budget (%)	25	29					27			
Output (enrollment rates--%):										
gross primary	71	80	77	77	78	76	76	72	71	
net primary	59	64					59			
gross secondary	37	41		38	38	41	40	39	40	
Quality:										
per student spending (index)	259	100					84	98		
grade 4 completion (%)	82	85	85	83	76	75				
Equity:										
% primary students female	43	44					43			

5.13 Gross primary enrollment rates declined from 1983 to 1987 because total enrollments grew at only one-third the rate of growth of the school-age population (Colclough and Lewin, 1990). The literature does not explain why total enrollment growth faltered. Perhaps enrollment rate declines are a lagged response to declining public education spending. Because declining student/teacher ratios result in part from enrollment rate declines, the former do not necessarily represent quality improvements.

5.14 Public spending per student during the 1980s remained less than half the 1975 level. From 1980 to 1985, recurrent spending per primary teacher decreased approximately 15 percent. 4,000 trained teachers left the sector between 1977 and 1981 because of inadequate salaries (Cornia, et.al., 1987). The share of the education budget allocated to teacher salaries declined from 1975 to 1984, before increasing abruptly in 1986 following a salary raise.

5.15 Education financing began to deteriorate in the 1970s, and trends continued under adjustment. In addition, output, quality, and equity indicators declined after 1980. The literature cites "macro policy changes" as one of several factors responsible for deterioration in the sector during the early 1980s. Sahn's "before" and "after" comparison implies that adjustment raised education expenditures significantly: education's share of discretionary spending increased from 16.1 percent "before" adjustment (1981-83) to 23.8 percent "after" adjustment (1986-87), and real education spending doubled. However, real public education spending more than halved between 1975 and 1984, and had not returned to 1975 levels by 1988. Colclough and Lewin (1990) describe effects of the 1987 Education SECAL including increases in enrollments and materials expenditures, decreases in subsidies, and the elimination of unnecessary non-teaching staff positions.

5.16 Adjustment policies may have contributed to improvements after 1985 in teacher salaries, education's share of the government budget (discretionary and total), and real education spending. However, real spending levels remain below 1975 pre-crisis levels. Furthermore, the literature does not examine how adjustment policies translated into sector quality, efficiency, or equity improvements, nor why certain indicators (particularly enrollment rates) continued to decline. The most recent data (1988) do not include figures for education quality, internal efficiency, or equity.

MALAWI

5.17 Malawi was an early adjustment borrower, and the adjustment program addressed education sector concerns through SAL conditionality. Serious economic difficulties began in the 1980s following several external shocks: deteriorating terms of trade from 1977-1980, disruption of transportation routes by the war in Mozambique, and drought in 1980/81. Debt service increased by 7.3 percent annually after 1980, while GDP and GDP per capita declined in 1980 and 1981 and increased only slowly after 1981. Malawi received its first SAL in 1981. Additional Bank loans followed almost annually from 1983 to 1990. Adjustment in Malawi was therefore protracted over an entire decade, contrary to the intentions of early adjustment lending, but representative of programs in many other countries. SALs focused on budget rationalization and restructuring, and included conditionality to increase development expenditures on education (SAL 1), and to ensure adequate budget outlays for education and improve efficiency in the fee collection system (SAL 2).

5.18 In accordance with SAL I conditionality, education's share of the public budget increased in 1981 and 1982. The subsequent decline may indicate that the increase was not sustainable (economically and/or politically). Following the first SAL, the declining trend in primary education's share of the sector budget was reversed, but higher education's share continued to grow at a faster pace. Meanwhile the growth of enrollments declined and enrollment rates stagnated during the 1980s, perhaps because rural families drew on children's labor to backstop the erosion of subsistence and surplus production. Initial evidence indicates that a decline in family production or cash income often places significant pressure on even young children, which may in turn lower school attendance and actual achievement (Roe and Johnson, 1989).

5.19 Sahn (1989) associates initial sector financing improvements with adjustment: education's share of the total government budget increased (from 11.5 percent to 15.0 percent) as did real education spending (from and index of 103 to 110) between the period before structural adjustment (up through 1980) and the period after (1981-84). However, they fell to 10.6 percent and 105 respectively in 1986-87. The rapid growth of enrollments between 1965 and 1980 slowed after 1980. Absolute primary enrollments actually dropped by 35,000 children (4 percent) between 1981 and 1983, corresponding closely to a period of drought and falling agricultural output.

Malawi: education indicators

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Finance:										
% of public budget	9.4	9.0	11.1	14.3	13.4	12.3	11.0	10.8	10.0	10.4
% of GDP	2.5	3.1	3.9	4.1	3.9	3.4	3.5	3.6	3.1	
real expenditures (index)	63	100		107			101		105	
Intrasectoral finance:										
recurrent budget share (%)	92	76					72			
primary share of budget (%)	45	39					41			
higher share of budget (%)					24			34		
Output (enrollment rates--%):										
gross primary	56	60	65	62	60	60	62	65	66	
net primary	36	40				43	44	48	49	
gross secondary		3	4	4	4	4	4	4	4	
Quality:										
per student spending (index)	111	100					104			
teacher salaries (index)		100	96	99	96	94	96			
primary repeaters (%)	17	17	15	14	16	16	18	21		
grade 4 completion (%)	67	59	60	53	52	47	53	68	64	
Equity:										
primary male enrollment (%)		72		73	69	69	70	73	73	
primary female enrollment (%)		48		52	50	51	53	57	59	

5.20 Sources disagree on public per student expenditure trends after 1980. Fuller (1989) describes declines at all levels between 1980 and 1987 (in 1980 US$): by over one-half in primary education, and by three-fourths in secondary and tertiary education. At the same time, Lockheed, Verspoor, et.al. (1990) describe a slight increase from 1980 to 1985 at the primary level (1985 US$). Public recurrent expenditure per primary teacher also declined ten percent from 1980 to 1988 (Lewin and Berstecher, 1989). The ratio of teacher salaries to manufacturing worker salaries declined through 1982 (from 0.91 in 1980 to 0.67),

but rose to 1.32 in 1985 (Zymelman and DeStefano, 1989). Improvements in the ratio of teacher salaries to manufacturing worker salaries suggest that education was protected relative to other public sectors during the adjustment period.

5.21 Changes in internal efficiency are ambiguous. The repeater rate in primary schools worsened, and the average length of study to produce a primary graduate increased from 5.7 years in 1980 to 6 in 1985 (Lewin and Berstecher, 1989). The difference between the number of years to produce a graduate and the number of years in the primary school system declined from 8 in 1980 to 7.2 in 1985, but the proportion of students progressing from the final grade of primary to the first grade of secondary general education declined from 15 percent in 1970 to 7 percent in 1983. Although university tuition increased incrementally, tertiary education's share of public education spending increased to over one-third in 1986 (Samoff, 1990b).

MOROCCO

5.22 Morocco addressed the need for adjustment through Bank-assisted sector adjustment programs, including the education sector. Unlike Ghana, Morocco's education SECAL did not follow a SAL. Following the second oil shock, Morocco's terms of trade deteriorated, while budget allocations to national defense increased. GDP growth slowed to under 4 percent per year between 1977-80, and debt service increased from 11 percent of exports in 1977 to 33 percent in 1981. Controlled adjustment began with IMF assistance in 1980. The Bank's involvement focused on SECALs (each year from 1984 to 1988, and 1990), and the first SAL was not until 1989. The World Bank's first-ever Education SECAL (1986) focused on expanding primary and lower secondary education by reorienting expenditures to these levels, while limiting the growth of upper secondary and university enrollments. In addition, the loan provided materials, supported quality improvements, reduced fellowships, and limited recruitment and salaries.

5.23 Between 1980 and 1988, the public budget as a proportion of GNP (net of the growing deficit) declined slightly while education's share of the budget increased slightly. The growth of total enrollments at the primary level slowed dramatically from seven percent between 1975-80 to only one percent from 1980-85. Recurrent expenditures per teacher declined three percent per year between 1980 and 1985 (Colclough and Lewin, 1990). The limited evidence on efficiency indicators shows improvement in primary education: the primary school final exam pass rate improved from 34 percent in 1980 to 61 percent in 1988, while repeater and dropout rates declined. However, improvement dates from before the 1986 Education SECAL.

5.24 Primary education's budget share did not change during the 1980s while tertiary education's share increased. The data do encompass the first years of the Education SECAL, and suggest that SECAL conditionality was not initially effective in reorienting budget allocations to primary education. A strong gender bias persists in enrollments at both primary and tertiary levels, and progress in increasing the proportion of females continues to be slow in the 1980s, especially at the primary level. Females comprised less than 40 percent of primary and tertiary enrollments in 1988. Box IV.10 provides a

comparison, unique in the literature, of primary education indicators for urban versus rural areas. Trends are similar in both areas, but the gap between urban and rural is significant and did not diminish during the 1980s, except for the gross enrollment rate.

Morocco: education indicators

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Finance:										
% of public budget	12.0	18.3					18.4			19.2
% of GDP	5.1	6.4								
real expenditures (index)	61	100								
Intrasectoral finance:										
recurrent budget share (%)	86	81								
primary share of budget (%)	37	34					34			34
higher share of budget (%)	14	17					18			20
Output:										
gross primary enrollment (%)	62	77	79	85	86	80	81			
net primary enrollment (%)	48	64					64			
Quality:										
per student spending (index)	80	100								
primary repeaters (%)	28	30					20			
primary dropouts (%)							11			10
Equity:										
% primary students female	36	37					38			38
% tertiary students female	20	25					34			34

PHILIPPINES

5.25 Adjustment in the Philippines was supported by several Bank loans, but none of these loans explicitly targeted education. The government nevertheless protected the education sector. Longstanding structural problems worsened following external shocks (the world recession of the early 1980s, and deteriorating terms of trade between 1979-83) and inadequate adjustment policies. As a result, the Philippines faced a severe foreign exchange crisis in 1984 and 1985. Per capita GNP in 1985 was below its 1975 level. Controlled adjustment with World Bank assistance began in 1981 with the first SAL. Additional adjustment loans included SALs in 1983 and 1987, as well as SECALs in 1985, 1988, 1989, and 1990. Bank conditionality emphasized privatization, trade liberalization, and the need to sustain operating and maintenance expenditure levels. Data coverage for the Philippines is excellent.

5.26 Despite public resource constraints during the recession of the early 1980s, education's share of the public budget remained constant (except in 1984), and its share of GDP increased after 1984. Although education's share of the budget and GNP increased, real education expenditures in 1985 were three-fourths their 1980 levels. Declining real education spending after 1980 may have contributed to a lower primary enrollment rate. The growth of enrollments slowed at all levels after 1980, although total enrollments continued to increase.

Philippines: education indicators

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Finance:										
% of public budget	13.8	11.1	10.9	11.5	10.7	8.4	11.5	11.6		
% of GNP		1.7	1.8	1.9	1.7	1.5	1.8	2.2	2.5	2.8
real expenditures (index)	87	100					75			
Intrasectoral finance:										
recurrent budget share (%)	82	96					93			
salary budget share (%)	87						62	59		
materials budget share (%)	0.3						0.9	0.6		
primary share of budget (%)	82	61					64			
Output (enrollment rates--%):										
gross primary	107	113	111	109	109	107	94	99		
net primary	94	94	93	92	88	88	90	89		
gross secondary	54	65	64	66	67	68	65	65		
gross tertiary	18	26	27	29	32	34	38			
Quality:										
per student expenditures (index)										
primary	95	100					63	83		
secondary	44	100					41	66		
tertiary	28	100					45			
achievement test scores (index)										
primary	85							100		
secondary				100		104	108			
primary repeaters (%)		2.4		2.1	2.3	2.3	1.8			
primary dropouts (%)				2.9	2.8	2.7	2.0			
primary completion (%)				67	67	65	63			
Equity:										
% primary students female	51	49					49			

5.27 Budget allocations to capital investment and materials expenditures increased slightly during the adjustment period. The recurrent share of the public education budget declined after 1980, but remained above its 1975 level. Perhaps as a result of increased

materials spending, the student/textbook ratio in primary schools improved dramatically from 10/1 in 1979 to 2/1 in 1987. Student scores on primary and secondary school achievement tests also improved. Real recurrent spending per primary teacher declined 45 percent between 1980 and 1985 (Lewin and Berstecher, 1989). Although teacher salaries declined from 1982 to 1985, rural teacher salaries were protected relative to average rural wages (Cornia, et.al., 1987). In addition, the ratio of annual teacher salaries to GNP per capita increased from 1.5 in 1983 to 2.2 in 1988 in public primary schools, and from 1.7 to 2.4 in public secondary schools.

5.28 Internal efficiency indicators are ambiguous: repeater and dropout rates improved while completion rates deteriorated during the 1980s. Equity in the education sector did not deteriorate under adjustment. Primary education's share of the total recurrent budget increased from 1980 to 1985, although its share again remained far below the 1975 level. Female gross primary enrollment rates exceeded 100 percent throughout the adjustment period.

5.29 As a result of rising enrollments and declining real expenditures on education, per student expenditures declined at all levels between 1980 and 1983: by one-third for primary students, and by over one-half for secondary and tertiary students. Primary education was protected relative to other levels during the first adjustment years. However, the decline in real education spending (total and per student) may have negative long-term impacts on quality and equity, although the evidence is ambiguous.

SOUTH KOREA

5.30 Like the Philippines, South Korea undertook macroeconomic adjustment with Bank assistance, and protected education even though lending did not explicitly target the sector. South Korea faced deteriorating economic conditions during the 1980 world-wide recession. Export growth stagnated with inflationary pressures from the second oil crisis and political instability. Unfavorable weather in 1980 caused a 22 percent decline in agricultural output. Real GNP declined 5.2 percent, the first decline in 20 years. Per capita real income also declined 10 percent from 1979-81. The government launched a comprehensive economic reform package focusing on stabilization, liberalization, and adjustment beginning in 1979. South Korea received World Bank SALs in 1982 and 1984, and an industry finance SECAL in 1985. SAL conditionality focused on rationalizing imports and exports, and real wage growth.

5.31 The South Korean structural adjustment program was an early one and therefore lacked any explicit consideration of the short-term effects of adjustment on vulnerable groups. The government's program nevertheless included measures to insulate the poor from adjustment, for example by increasing spending on education. "Korea's adjustment and its accompanying social programs to protect the poor are widely regarded as models for other countries" (Stevenson, 1988).

5.32 However, as in Ghana, enrollment rates declined despite increasing public spending. Was protection insufficient? Should spending have increased even more? Or

do enrollment rates depend on factors other than public spending levels? For example, do changes in family incomes have a greater influence than perceived education quality on demand for education? The evidence that increases in public education spending do not automatically raise enrollment rates may have important implications for education policy in other countries.

5.33 Education spending increased its share of GNP significantly between 1980 and 1988. This growth resulted from increasing public spending as a share of GNP combined with an increase in education's share of the public budget. Real education expenditures more than quadrupled between 1975 and 1985. However, primary enrollment rates dropped from 1980 to 1985, even though a pre-existing program of tuition exemption for poor children expanded during the 1979-81 recession. Total primary enrollments declined three percent between 1980-85. Increasing public spending and declining enrollments caused public education spending per primary student to nearly double between 1980 and 1985.

South Korea: education indicators

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Finance:										
% of public budget	12.9	14.6	14.4	17.0	17.9	16.8	16.9			
% of GDP	2.2	3.7					4.8			
real expenditures (index)	41	100					186			
Intrasectoral finance:										
recurrent budget share (%)	74	84					80			
primary share of budget (%)	62	50					47			
Output (enrollment rates--%):										
gross primary	107	109	107	109	103	99	96			
net primary	100						94			
Quality:										
per student spending (index)	46	100					192			
primary repeaters (%)	0	0					0			
Equity:										
% primary students female	48	49					49			

5.34 The share of recurrent spending in the total budget declined slightly from 1980 to 1985, suggesting that, unlike the pattern found in many countries, investment in education was not neglected during the adjustment period. Female primary enrollment rates exceeded total enrollment rates. One cause for concern is the declining share of sector spending allocated to primary education.

TURKEY

5.35 Similar to the previous two cases, the adjustment program in Turkey did not explicitly address education, despite massive borrowing from the World Bank throughout the decade. However, Turkey was less successful at protecting education than were the Philippines and South Korea. A growing external debt burden abruptly halted growth in mid-1977, with a sharp deterioration in creditworthiness, severe shortages of imports, disruptions in industrial production and a consequent rise in urban unemployment. GNP, which was growing at an annual rate of 4 percent in 1977, declined in 1979. Inflation increased from 24 percent 1977 to 64 percent 1979. Turkey received five SALs between 1980 and 1984 totalling over $1.5 billion, as well as four SECALs from 1985 to 1988 totalling $1.4 billion. SAL conditionality emphasized increasing efficiency, reducing the role of the public sector in the economy, rationalizing investment, and promoting exports.

Turkey: education indicators

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Finance:										
% of public budget	23.1	14.2						11.9		
% of GDP		2.8					2.3			
real expenditures (index)		100					106			
Intrasectoral finance:										
recurrent budget share (%)		84					83			
primary share of budget (%)		44					46			
Output (enrollment rates--%):										
gross primary	108	96	100		111	113	113			
net primary	72	65					75			
Quality:										
per student spending (index)		100					94			
secondary placement exam pass rate (%)				22	35	28	28			
Equity:										
% primary students female	45	45					47			

5.36 Data on Turkey's education sector is scarce, and the most recent (for only one indicator) is from 1986. Education suffered the greatest setbacks (declines in education's share of the government budget and the primary enrollment rate) during economic shocks in the late 1970s, rather than during the Bank-assisted adjustment process after 1980. During the adjustment period enrollment rates recovered, but education's share of government spending remained below the 1975 level. Despite declining sector financing,

the growth of total primary enrollments accelerated from 0.7 percent per year from 1975-80 to 3.2 percent per year from 1980-85 (Colclough and Lewin, 1990).

5.37 The literature provides little information on the quality and efficiency of education during the adjustment period. Because spending declined while enrollments increased, public education spending per primary student declined. Real recurrent spending per primary teacher increased by about 5 percent between 1980 and 1985 (Lewin and Berstecher, 1989). Despite declining public expenditures, the proportion of secondary graduates successful at placement exams improved between 1982 and 1985. Female primary enrollment rates paralleled total enrollment rates, declining from 97 percent in 1975 to 90 percent in 1980, but rising to 110 percent in 1985. The proportion of female students in primary enrollments increased slightly during the adjustment period.

ZAMBIA

5.38 The Bank assisted adjustment in Zambia through sector adjustment programs and recovery credits, none of which targeted education explicitly. Copper prices collapsed in the mid-1970s, and terms of trade deteriorated. The currency became increasingly overvalued, and the network of controls on imports, foreign exchange and credit allocation became increasingly complex. Despite a declining revenue base, the government tried to maintain government services and employment, resulting in a growing budget deficit that attained 18 percent of GDP in 1980-82. Controlled adjustment began around 1982. Zambia received World Bank adjustment loans beginning in 1984: SECALs in 1984, 1985, and 1986 followed by recovery credits in 1986 and 1990. Conditionality focused on promoting exports (SECALs), as well as restructuring public expenditures, strengthening government capacity for economic management, and wage restraint (SALs).

5.39 Trends of fewer real resources to education and a higher share to wages began before adjustment. Increased spending levels around 1982 were only a brief interruption of declining trends. Unlike in Ghana and Malawi, education's share of the discretionary public budget and real education expenditures both declined from the period before to the period after adjustment. Colclough and Lewin (1990) state that adjustment failed to increase the orientation of social spending to primary services delivery. Primary and tertiary education's shares of recurrent spending in fact did not change from 1980 to 1983.

5.40 Enrollment rates fell before, and rose after, 1980. The growth of total primary enrollments increased from 3.6 percent per year between 1975-80 to 5.3 percent in the 1980-85 period (UNDP 1990b). Given rising enrollments while sector resources declined, a decline in per student expenditures was inevitable: at the primary level they fell by one-third from 1975 to 1985, with the bulk of the decline before 1980. However, the evidence on quality and equity is scarce and contradictory. Most declines occurred between 1975 and 1980, and evidence suggests stagnation after 1980. The elimination of private enrollments between 1975 and 1980 (declining from 24 to 1 percent of primary enrollments) may have serious implications for education quality. Although it promoted greater equity between wealthy and poor students, it increased the burden on public resources at a time when the latter were shrinking and enrollments were rising. However, the difference between the

number of years to produce a graduate and the number of years in the primary system improved, from 1.4 in 1975 to 0.7 in 1985.

Zambia: education indicators

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Finance:										
% of public budget	13.9	11.4	11.9	15.1	14.5	16.0	12.3		8.3	
% of GDP	5.9	4.2	4.3	5.9	4.7	4.7	4.3	3.5	2.9	
real expenditures (index)	139	100	110	145	112	112	104	86	73	
Intrasectoral finance:										
recurrent budget share (%)	77	95				94				
budget share to salaries (%)										
primary	77	88	91	89	91					
secondary	14	30	34	38	42					
budget shares by level (%)										
primary	45	45	43	45	47					
secondary	22	22	20	20	20					
higher	8	11	14	14	11					
Output (enrollment rate--%):										
gross primary	97	90			93	96	99	97		
net primary		77			80	81				
gross secondary	15	16		17	17	17	17			
Quality:										
per student spending (index)	143	100					96			
teacher salaries (index)		100	83	89	113	88				
primary repeaters (%)	2.1	1.9	1.5	1.3	1.5	1.8		2.1		
grade 4 completion (%)	96	99	100					100		
Equity:										
primary enrollment rates (%)										
male	105	98			100	103	106	102		
female	88	82			87	89	93	92		
% primary students female	45	47					47			

5.41 Within the recurrent budget, salaries were given increasing priority at the primary and secondary levels. Nevertheless, real recurrent spending per primary teacher declined by 12 percent from 1980 to 1984 (Lewin and Berstecher, 1989). Teacher salaries during the early years of adjustment were protected relative to those of manufacturing workers: the ratio of teacher salaries to manufacturing worker salaries increased from 1.05 in 1980 to 1.56 in 1984. However, real teacher salaries in 1984 were below 1980 levels (Zymelman and DeStefano, 1989).

ANNEX 2: WORLD BANK ADJUSTMENT OPERATIONS BY COUNTRY

Country	Loan or credit	Year
Algeria	Economic reform	1990
Angola	Rehabilitation	1990
Argentina	Agriculture	1986
	Trade policy I	1987
	Banking	1988
	Trade policy II	1989
Bangladesh	Program	1980
	Program	1981
	Program	1982
	Program	1983
	Program	1984
	Program	1986
	Industry	1987
	Energy	1989
	Finance	1990
Benin	SAL I	1989
Bolivia	SAL I	1980
	Reconstruction imports	1986
	Reconstruction imports II	1987
	Financial	1988
Brazil	Agriculture	1984
	Export development	1984
	Credit and marketing	1986
Burkina Faso	Fertilizer	1985
Burundi	SAC I	1986
	SAL II	1988
	Agriculture	1989
	Coffee	1990
Cameroon	SAL I	1989
Central African Rep.	SAL I	1987
	Cotton	1988
	SAL II	1988
Chad	Financial rehabilitation	1989
	Transport	1989
	Social development	1990
Chile	SAL I	1986
	SAL II	1987
	SAL III	1988
China	Rural sector	1988
Colombia	Trade policy	1985
	Trade and agriculture	1986
	Power	1988
Congo	SAL	1988
Costa Rica	Export development	1983
	SAL I	1985
	SAL II	1989
Côte d'Ivoire	SAL I	1982
	SAL II	1984
	SAL III	1986
	Agriculture	1990

Country	Loan or credit	Year
Côte d'Ivoire (continued)	Energy	1990
	Water supply/sewerage	1990
Dominica	SAC I	1987
Ecuador	Agriculture	1986
	Financial	1988
Equatorial Guinea	Rehabilitation imports	1986
	SAL I	1990
Gabon	SAL	1988
Gambia	SAL	1987
	SAL II	1989
Ghana	Reconstruction imports	1983
	Export rehabilitation	1984
	Reconstruction imports	1985
	Industry	1986
	SAL I	1987
	Education	1987
	Financial	1988
	SAC II	1989
	Education II	1990
Guatemala	Export	1990
Guinea	SAC I	1986
	SAL II	1988
	Education	1990
Guinea Bissau	Rehabilitation imports	1985
	SAL I	1987
	SAC II	1989
Guyana	SAL I	1980
	SAC II	1990
Haiti	Economic recovery	1987
Honduras	SAL I	1989
Hungary	Industry	1986
	Industry	1988
	SAL	1990
Indonesia	Trade	1987
	Trade policy II	1988
	Private sector development	1989
Jamaica	Export development	1980
	Export development II	1981
	SAL I	1982
	Export development III	1983
	SAL II	1983
	SAL III	1985
	Public enterprise	1987
	Trade and finance	1987
	Agriculture	1990
Jordan	Trade	1990
Kenya	SAC I	1980
	SAC II	1983
	Agriculture	1986
	Industry operations	1988
	Finance	1989

Country	Loan or credit	Year
Laos	SAC	1989
Madagascar	Industry	1985
	Agriculture	1986
	Industry and trade	1987
	Public sector	1988
Malawi	SAL I	1981
	Fertilizer	1983
	SAL II	1984
	SAL III	1986
	Industry and trade	1988
	Agriculture	1990
Mali	Public enterprise	1988
	Human resources	1989
Mauritania	Public enterprise	1985
	SNIM rehabilitation	1986
	SAL	1987
	Agriculture/irrigation	1990
	Public enterprise	1990
Mauritius	SAL I	1981
	SAL II	1984
	Industry	1987
Mexico	Export development I	1983
	Trade policy	1987
	Agriculture	1988
	Fertilizer	1988
	Trade policy II	1988
	Finance	1989
	Industry restructuring	1989
	Industry policy	1989
	Public enterprise	1989
	Deregulation	1990
	Exports II	1990
	Special interests	1990
Morocco	Industry trade policy	1984
	Agriculture I	1985
	Industry trade policy	1986
	Education	1986
	Public enterprise	1987
	Agriculture II	1988
	SAL I	1989
	Debt management	1990
Mozambique	Rehabilitation	1985
	Rehabilitation II	1988
	Rehabilitation III	1989
	Small/medium enterprises	1990
Nepal	SAL	1987
	SAL II	1989
Niger	SAC	1986
	Public enterprise	1987
Nigeria	Fertilizer imports	1984
	Trade policy	1987
	Trade and investment policy	1989
	Budgetary finance policy	1990
	University development	1990
Pakistan	Fertilizer imports	1981
	SAL I	1982
	Energy	1985

Country	Loan or credit	Year
Pakistan (continued)	Export development	1986
	Agriculture	1989
	Energy II	1989
	Finance	1989
	Transport/railways	1990
Panama	SAL I	1984
	SAL II	1987
Philippines	SAL I	1981
	SAL II	1983
	Agriculture	1985
	Economic recovery	1987
	Government corporations	1988
	Finance	1989
Rwanda	Telecommunications	1990
Sao Tomé & Principé	SAL I	1987
	SAC II	1990
Senegal	SAL I	1981
	SAC II	1986
	SAL III	1987
	Banking/Finance	1990
	SAC IV	1990
	Transport	1990
Sierra Leone	Agriculture	1984
Somalia	Agriculture	1986
	SAL/Agriculture II	1989
South Korea	SAL I	1982
	SAL II	1984
	Industry Finance	1985
Sri Lanka	Economic recovery	1990
Sudan	Agriculture rehabilitation	1980
	Agriculture rehabilitation II	1983
	Economic recovery	1990
Tanzania	Export rehabilitation	1981
	Multisector rehabilitation	1987
	Industry and trade	1989
Thailand	SAL I	1982
	SAL II	1983
Togo	SAC I	1983
	SAL II	1985
	SAL III	1988
Tunisia	Agriculture	1987
	Industry and trade policy	1987
	SAL I	1988
	Agriculture II	1989
	Public enterprise	1990
Turkey	SAL I	1980
	SAL II	1981
	SAL III	1982
	SAL IV	1983
	SAL V	1984
	Agriculture	1985
	Finance	1986
	Energy	1987
	Finance II	1988

Country	Loan or credit	Year
Uganda	Reconstruction I	1980
	Reconstruction II	1982
	Agriculture rehabilitation	1983
	Reconstruction III	1984
	Economic recovery	1988
Uruguay	Agriculture	1985
	SAL I	1987
	SAL II	1989
Venezuela	SAL	1989
	Trade policy	1989
Yugoslavia	SAL I	1983
	Fertilizer	1984
Zaire	Industry	1986
	SAL I	1987
Zambia	Export rehabilitation	1984
	Agriculture rehabilitation	1985
	Industry	1986
	Recovery	1986
Zimbabwe	Manufacturing exports	1983

Source: World Bank Adjustment Operations Data.

ANNEX 3: COUNTRY TYPOLOGY OF FISCAL DURESS

The following countries are categorized as experiencing "fiscal duress" during the 1980s if they met two of three criteria: sustained improvement in fiscal balance, sustained reductions in the share of government spending in GDP, and sustained reductions in real government spending.

Education spending I (% of government budget)

	Total budget		Discretionary budget	
	1975-79	1980-85	1975-79	1980-85
Africa	15.3	15.3	16.1	16.9
Africa duressed	13.9	15.2	14.6	17.1
Asia	12.4	12.4	13.6	14.2
Asia duressed	17.6	16.7	18.8	18.6
EMENA	11.6	11.7	12.1	13.4
EMENA duressed	14.2	13.7	15.9	17.3
LAC	16.6	14.5	17.4	15.7
LAC duressed	18.2	16.1	18.6	16.4

Gross enrollment rates (%)

	Primary schools			Secondary schools		
	1975-77	1980-82	1984-85	1975-77	1980-82	1984-85
Africa	61	71	71	13	16	18
Africa duressed	60	71	67	9	14	12
Asia	55	66	68	33	34	36
Asia duressed	56	57	52	44	47	49
EMENA	69	77	77	33	42	49
EMENA duressed	86	99	102	30	38	44
LAC	100	103	104	39	46	50
LAC duressed	104	109	110	40	48	53

		Initial adjustment period	Adjustment borrower
Africa	Benin	1984	X
	Central African Republic	1983-84	X
	Congo	1983	X
	Côte d'Ivoire	1983	X
	Liberia	1983	
	Madagascar	1983	X
	Malawi	1982	X
	Mauritania	1984-86	X
	Niger	1982-84	X
	Senegal	1983-85	X
	Sierra Leone	1980-82	X
	Somalia	1980	X
	Tanzania	1980-83	X
	Togo	1980-82	X
	Uganda	1985	X
LAC	Bahamas	1980-84	
	Chile	1983-85	X
	Colombia	1983-85	X
	Ecuador	1983-85	X
	El Salvador	1981-83	
	Jamaica	1981	X
	Mexico	1983	X
	Nicaragua	1984	
	Peru	1982	
	Uruguay	1983-85	X
	Venezuela	1982-83	
EMENA	Iran	throughout	
	Jordan	1981	
	Morocco	1982-83	X
	Tunisia	1985-86	X
	United Arab Emirates	1983	
Asia	Fiji	1982-83	
	Papua New Guinea	1982	
	Sri Lanka	1981-83	
	Thailand	1986	X

Source: Gallagher (1990).

ANNEX 4: COUNTRY TYPOLOGY OF ADJUSTMENT

IAL countries (intensely adjusting) have received three or more SALs, or two completed SALs, by 1989, with lending starting in or before 1985 (25 cases).

Pre-1986 countries have received less than three SALs but were included in the program before 1985 (11 cases).

Post-1985 countries received adjustment loans between 1986-1988 (19 cases).

NAL+ countries had an increase in average annual per capita GDP growth during the period 1980-87 (17 cases). These countries do not need IMF/World Bank types of adjustment measures, unless the policies they pursue are unsustainable.

NAL- countries had a decrease in average annual per capita GDP growth during the period 1980-87 (14 cases). These are potential candidates for World Bank adjustment lending, and are probably the closest to the counterfactual nonadjusting countries.

Public education financing (% of total public expenditures)

	Countries	1975	1980	1986
IAL	11	14.8	14.8	12.0
Pre-1986	2	16.2	15.5	19.0
Post-1985	3	9.7	6.7	8.1
NAL	12	9.9	10.0	12.1

Public education financing (% of GDP)

	Countries	1975	1980	1986
IAL	11	3.3	3.5	2.9
Pre-1986	2	3.0	4.0	4.6
Post-1985	3	---	6.7	8.1
NAL	12	9.9	10.0	12.1

Gross primary enrollment rates (%)

	Countries	1970	1975	1980	1985
IAL	25	77.4	83.2	94.2	90.1
Pre-1986	9	67.3	70.8	75.5	84.0
Post-1985	18	52.4	65.5	68.4	73.7
NAL (Total)	33	73.5	80.3	86.0	91.1
NAL+	18	76.9	82.4	89.9	98.3
NAL-	15	69.4	77.7	81.3	82.6

Per capita education expenditures (1980 PPP dollars)

	Countries	1980	1986
IAL	11	81.2	73.2
Pre-1986	2	29.7	40.1
Post-1985	3	27.4	39.9
NAL	12	48.7	90.8

IAL Countries

Low-income	Ghana	Middle-income	Bolivia
	Kenya		Brazil
	Madagascar		Chile
	Malawi		Colombia
	Mauritania		Costa Rica
	Nigeria		Côte d'Ivoire
	Pakistan		Jamaica
	Tanzania		Mauritius
	Togo		Mexico
	Zambia		Morocco
			Philippines
			Senegal
			South Korea
			Thailand
			Turkey

Pre-1986 Countries

Low-income	Burkina Faso	Middle-income	Ecuador
	Guinea Bissau		Panama
	Guyana		Uruguay
	Sierra Leone		Yugoslavia
	Sudan		Zimbabwe
	Uganda		

Post-1985 Countries

Low-income	Bangladesh	Middle-income	Argentina
	Burundi		Gabon
	Central African Rep.		Honduras
	Chad		Hungary
	China		Tunisia
	Congo		
	Gambia		
	Guinea		
	Indonesia		
	Mali		
	Nepal		
	Niger		
	Somalia		
	Zaire		

NAL+ Countries

Low-income	Benin	Middle-income	Botswana
	Myanmar		Cameroon
	India		Dominican Republic
	Rwanda		Egypt
	Sri Lanka		Jordan
			Malaysia
			Oman
			Paraguay
			Peru
			Poland
			Portugal
			Yemen Arab Republic

NAL- Countries

Low-income	Ethiopia	Middle-income	Algeria
	Haiti		El Salvador
	Lesotho		Guatemala
	Liberia		Nicaragua
	Mozambique		Papua New Guinea
	Yemen PDR		Syria
			Trinidad & Tobago
			Venezuela

Source: Kakwani, Makonnen and van der Gaag (1990).

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